



# STIC Search Report

## EIC 1700

STIC Database Tracking Number: 150464

TO: Duc Truong  
Location: REM 10D71  
Art Unit : 1711  
April 22, 2005

Case Serial Number: 10/714356

From: Kathleen Fuller  
Location: EIC 1700  
REMSSEN 4B28  
Phone: 571/272-2505  
Kathleen.Fuller@uspto.gov

### Search Notes

I tried to do this search to find a non-polymer of A and B but it would not run. So I did a Casreact search to find the product C. There were only 2 answers and they did not show the structures of the reactions. Then I did a structure search a query covering C. I combined the answers with preparation and monomer? For 41 CA references.

The case 10/713469 I had to search like a polymer or it would not run. I searched for it by the monomers A, B and D.



# STIC Search Results Feedback Form

**EIC17000**

Questions about the scope or the results of the search? Contact *the EIC searcher or contact:*

Kathleen Fuller, EIC 1700 Team Leader  
571/272-2505 REMSEN 4B28

## Voluntary Results Feedback Form

- I am an examiner in Workgroup:  Example: 1713  
➤ Relevant prior art **found**, search results used as follows:

- ☐ 102 rejection
- ☐ 103 rejection
- ☐ Cited as being of interest.
- ☐ Helped examiner better understand the invention.
- ☐ Helped examiner better understand the state of the art in their technology.

Types of relevant prior art found:

- ☐ Foreign Patent(s)
- ☐ Non-Patent Literature  
(journal articles, conference proceedings, new product announcements etc.)

- Relevant prior art **not found**:

- ☐ Results verified the lack of relevant prior art (helped determine patentability).
- ☐ Results were not useful in determining patentability or understanding the invention.

Comments:

Drop off or send completed forms to EIC1700 REMSEN 4B28



TRUONG 10/714356 4/22/05

=> file casreac

FILE 'CASREACT' ENTERED AT 14:43:15 ON 22 APR 2005

USE IS SUBJECT TO THE TERMS OF YOUR CUSTOMER AGREEMENT

COPYRIGHT (C) 2005 AMERICAN CHEMICAL SOCIETY (ACS)

Copyright of the articles to which records in this database refer is held by the publishers listed in the PUBLISHER (PB) field (available for records published or updated in Chemical Abstracts after December 26, 1996), unless otherwise indicated in the original publications.

FILE CONTENT:1840 - 17 Apr 2005 VOL 142 ISS 16

New CAS Information Use Policies, enter HELP USAGETERMS for details.

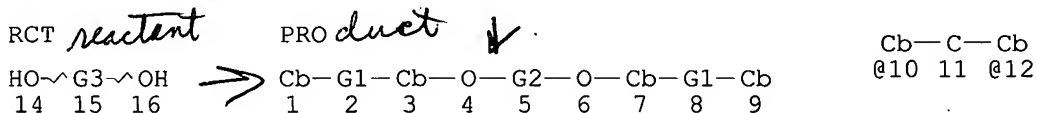
\*\*\*\*\*  
\*  
\* CASREACT now has more than 8 million reactions \*  
\*  
\*\*\*\*\*

Some CASREACT records are derived from the ZIC/VINITI database (1974-1991) provided by InfoChem, INPI data prior to 1986, and Biotransformations database compiled under the direction of Professor Dr. Klaus Kieslich.

This file contains CAS Registry Numbers for easy and accurate substance identification.

=> d que

L5 STR



Cb @13

REP G1=(0-2) A

VAR G2=13/10-4 12-6

VAR G3=13/10-14 12-16

NODE ATTRIBUTES:

NSPEC IS RC AT 11

DEFAULT MLEVEL IS ATOM

GGCAT IS UNS AT 1

GGCAT IS UNS AT 3

GGCAT IS UNS AT 7

GGCAT IS UNS AT 9

GGCAT IS UNS AT 10

GGCAT IS UNS AT 12

GGCAT IS PCY UNS AT 13

DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED

NUMBER OF NODES IS 16

STEREO ATTRIBUTES: NONE

L8 SCR 1843

L12 SCR 1136

KATHLEEN FULLER EIC 1700 REMSON 4B28 571/272-2505

## SEARCH REQUEST FORM

Scientific and Technical Information Center

Requester's Full Name: DRONG, Hc Examiner #: 69332 Date: 4/11/05  
 Art Unit: 1711 Phone Number 302-1581 Serial Number: 10/714,356  
 Mail Box and Bldg/Room Location: 10D71 Results Format Preferred (circle): PAPER DISK E-MAIL

If more than one search is submitted, please prioritize searches in order of need.

\*\*\*\*\*

Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: \_\_\_\_\_

Inventors (please provide full names): \_\_\_\_\_

SCIENTIFIC REFERENCE BR  
 Sci & Tech Inf Ctr

APR 12 REC'D

Earliest Priority Filing Date: \_\_\_\_\_

\*For Sequence Searches Only\* Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.

Pat & TM Office

Please search <sup>A+B</sup> C + D of claim 1, to form the product in claim 17 of 10/713,469. Thanks

## STAFF USE ONLY

Searcher: K. Fuller

Searcher Phone #: \_\_\_\_\_

Searcher Location: \_\_\_\_\_

Date Searcher Picked Up: \_\_\_\_\_

Date Completed: 4/22/05

Searcher Prep & Review Time: 90

Clerical Prep Time: \_\_\_\_\_

Online Time: 3.7

## Type of Search

NA Sequence (#) \_\_\_\_\_

AA Sequence (#) \_\_\_\_\_

Structure (#) 6

Bibliographic \_\_\_\_\_

Litigation \_\_\_\_\_

Fulltext \_\_\_\_\_

Patent Family \_\_\_\_\_

Other \_\_\_\_\_

## Vendors and cost where applicable

STN ✓

Dialog \_\_\_\_\_

Questel/Orbit \_\_\_\_\_

Dr.Link \_\_\_\_\_

Lexis/Nexis \_\_\_\_\_

Sequence Systems \_\_\_\_\_

WWW/Internet \_\_\_\_\_

Other (specify) \_\_\_\_\_

Correct  
 prep

TRUONG 10/714356 4/22/05

L14 2 SEA FILE=CASREACT SSS FUL L5 AND L8 AND L12 ( 7 REACTIONS)

*2 CA references with reactions*

=> d l14 bib abs crd

L14 ANSWER 1 OF 2 CASREACT COPYRIGHT 2005 ACS on STN  
AN 136:70061 CASREACT  
TI A useful bicyclic topological decapeptide template for solution-phase combinatorial synthesis of tetrapodal libraries  
AU Xu, Q.; Borremans, F.; Devreese, B.  
CS Department of Organic Chemistry, University of Ghent, Ghent, 9000, Belg.  
SO Tetrahedron Letters (2001), 42(41), 7261-7263  
CODEN: TELEAY; ISSN: 0040-4039  
PB Elsevier Science Ltd.  
DT Journal  
LA English  
AB An orthogonally protected bicyclic decapeptide has been constructed and evaluated as a template for combinatorial synthesis. This peptide, bicyclo(KCKPGKCKPG), has four (quasi) orthogonal protecting groups (Fmoc, Boc, Alloc and Dde), allowing site-selective assembly of building blocks. This template is found most useful for solution-phase combinatorial synthesis of tetrapodal libraries. Four groups of three different amino acids yielded all theor. expected 27x3 library compds.

RX(1) OF 3 - REACTION DIAGRAM NOT AVAILABLE

RX(2) OF 3 - REACTION DIAGRAM NOT AVAILABLE

RX(3) OF 3 - REACTION DIAGRAM NOT AVAILABLE

RE.CNT 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

=> d l14 bib abs crd 2

L14 ANSWER 2 OF 2 CASREACT COPYRIGHT 2005 ACS on STN  
AN 114:82583 CASREACT  
TI Ethynyl-terminated ethers. Synthesis and thermal characterization of 2,2-bis(4-ethynyl-4-phenylcarbonyl-4-phenoxyphenyl)propane and 2,2-bis(4-ethynyl-4-phenylsulfonyl-4-phenoxyphenyl)propane  
AU Lucotte, Georges; Cormier, Laurent; Delfort, Bruno  
CS Inst. Natl. Rech. Chim. Appl., Vert-le-Petit, F-91710, Fr.  
SO Polymer Bulletin (Berlin, Germany) (1990), 24(6), 577-82  
CODEN: POBUDR; ISSN: 0170-0839  
DT Journal  
LA English  
AB The title ethers were each prepared by a three-step synthesis. Thermal polymerization of the ethers occurred at 200-250°.

RX(3) OF 6 - REACTION DIAGRAM NOT AVAILABLE

RX(4) OF 6 - REACTION DIAGRAM NOT AVAILABLE

RX(5) OF 6 - REACTION DIAGRAM NOT AVAILABLE

RX(6) OF 6 - REACTION DIAGRAM NOT AVAILABLE

KATHLEEN FULLER EIC 1700 REMSON 4B28 571/272-2505

TRUONG 10/714356 4/22/05

=>

KATHLEEN FULLER EIC 1700 REMSON 4B28 571/272-2505

=> file reg

FILE 'REGISTRY' ENTERED AT 15:57:51 ON 22 APR 2005

USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.

PLEASE SEE "HELP USAGETERMS" FOR DETAILS.

COPYRIGHT (C) 2005 American Chemical Society (ACS)

Property values tagged with IC are from the ZIC/VINITI data file provided by InfoChem.

STRUCTURE FILE UPDATES: 21 APR 2005 HIGHEST RN 848979-49-7

DICTIONARY FILE UPDATES: 21 APR 2005 HIGHEST RN 848979-49-7

New CAS Information Use Policies, enter HELP USAGETERMS for details.

TSCA INFORMATION NOW CURRENT THROUGH JANUARY 18, 2005

Please note that search-term pricing does apply when conducting SmartSELECT searches.

\*\*\*\*\*  
\*  
\* The CA roles and document type information have been removed from \*  
\* the IDE default display format and the ED field has been added, \*  
\* effective March 20, 2005. A new display format, IDERL, is now \*  
\* available and contains the CA role and document type information. \*  
\*  
\*\*\*\*\*

Crossover limits have been increased. See HELP CROSSOVER for details.

Experimental and calculated property data are now available. For more information enter HELP PROP at an arrow prompt in the file or refer to the file summary sheet on the web at:

<http://www.cas.org/ONLINE/DBSS/registryss.html>

=> file hcaplu

FILE 'HCAPLUS' ENTERED AT 15:57:55 ON 22 APR 2005

USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.

PLEASE SEE "HELP USAGETERMS" FOR DETAILS.

COPYRIGHT (C) 2005 AMERICAN CHEMICAL SOCIETY (ACS)

Copyright of the articles to which records in this database refer is held by the publishers listed in the PUBLISHER (PB) field (available for records published or updated in Chemical Abstracts after December 26, 1996), unless otherwise indicated in the original publications. The CA Lexicon is the copyrighted intellectual property of the the American Chemical Society and is provided to assist you in searching databases on STN. Any dissemination, distribution, copying, or storing of this information, without the prior written consent of CAS, is strictly prohibited.

FILE COVERS 1907 - 22 Apr 2005 VOL 142 ISS 18

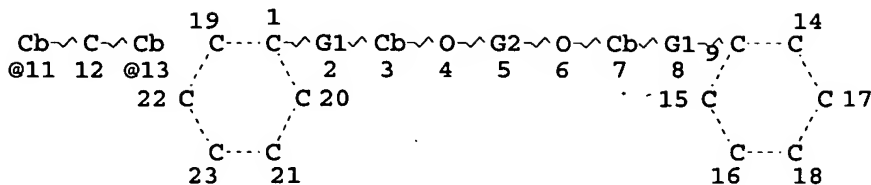
FILE LAST UPDATED: 21 Apr 2005 (20050421/ED)

New CAS Information Use Policies, enter HELP USAGETERMS for details.

This file contains CAS Registry Numbers for easy and accurate substance identification.

=> d que

L5 SCR 1843  
L7 SCR 2043  
L9 SCR 1136  
L11 STR



Cb @10

*424 structures covering C*

REP G1=(0-2) A  
VAR G2=10/11-4 13-6  
NODE ATTRIBUTES:  
NSPEC IS RC AT 12  
DEFAULT MLEVEL IS ATOM  
GGCAT IS UNS AT 3  
GGCAT IS UNS AT 7  
GGCAT IS PCY UNS AT 10  
GGCAT IS UNS AT 11  
GGCAT IS UNS AT 13  
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:  
RSPEC I  
NUMBER OF NODES IS 23

STEREO ATTRIBUTES: NONE  
L14 SCR 2005  
L16 SCR 1918  
L18 424 SEA FILE=REGISTRY SSS FUL L11 AND L5 AND L9 AND L14 NOT (L7 OR L16)  
L19 193 SEA FILE=HCAPLUS ABB=ON L18  
L20 132 SEA FILE=HCAPLUS ABB=ON L19(L) PREP/RL  
L21 41 SEA FILE=HCAPLUS ABB=ON L20 AND MONOMER?

=> d l21 1-41 bib abs ind hitstr

L21 ANSWER 1 OF 41 HCAPLUS COPYRIGHT 2005 ACS on STN  
AN 2005:182735 HCAPLUS  
DN 142:262690  
TI Preparation of benzoxazole resin precursors for resin films with good heat resistance and semiconductor devices  
IN Enoki, Takashi; Fujimoto, Masanori; Murayama, Mitsumoto  
PA Sumitomo Bakelite Company Limited, Japan  
SO PCT Int. Appl., 91 pp.  
CODEN: PIXXD2  
DT Patent  
LA Japanese  
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2005019305	A1	20050303	WO 2004-JP11949	20040813
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH,				



CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD,  
 GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC,  
 LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI,  
 NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY,  
 TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW  
 RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM,  
 AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK,  
 EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE,  
 SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE,  
 SN, TD, TG

PRAI JP 2003-296367 A 20030820

AB Title precursor comprises first repeating units formed by reacting a bis-aminophenol compound having a functional group with a dicarboxylic acid. Thus, 38 g 5-bromoresorcinol and 109 g 2-benzyloxy-4-fluoronitrobenzene were reacted, hydrolyzed with iodotrimethylsilane, reacted with ethynylbenzene, and reduced to give 1,3-bis(3-hydroxy-4-aminophenoxy)-5-phenylethynylbenzene, 38.2 g of which was reacted with 20.3 g terephthaloyl dichloride to give a precursor with Mn 21,000, the resulting precursor was dissolved in N-methyl-2-pyrrolidone, applied on a silicon wafer, heated at 90° for 1 min, 250° for 1 h, and 330° for 1 h to give a coating with glass transition temperature ≥450°, thermal decomposition temperature 550°, and dielec. constant 2.0.

IC ICM C08G073-22

ICS H01L021-312

CC 38-3 (Plastics Fabrication and Uses)

Section cross-reference(s): 35, 76

ST benzoxazole resin precursor film heat resistance semiconductor device prepn; bromoresorcinol benzyloxyfluoronitrobenzene ethynylbenzene reactant bishydroxyaminophenoxyphenylethynylbenzene monomer prepn; bishydroxyaminophenoxyphenylethynylbenzene terephthaloyl dichloride copolymer coating prepn

IT Polyamides, uses

Polybenzoxazoles

RL: IMF (Industrial manufacture); POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(cardo; preparation of benzoxazole resin precursors for resin films with good heat resistance and semiconductor devices)

IT Electric insulators

(coatings; preparation of benzoxazole resin precursors for resin films with good heat resistance and semiconductor devices)

IT Coating materials

(heat-resistant; preparation of benzoxazole resin precursors for resin films with good heat resistance and semiconductor devices)

IT Polyamides, preparation

RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)

(hydroxy-containing, precursors; preparation of benzoxazole resin precursors for

resin films with good heat resistance and semiconductor devices)

IT Polyethers, uses

RL: IMF (Industrial manufacture); POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(polyamide-, cardo; preparation of benzoxazole resin precursors for resin films with good heat resistance and semiconductor devices)

IT Polyethers, preparation

RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)

(polyamide-, hydroxy-containing, precursors; preparation of benzoxazole

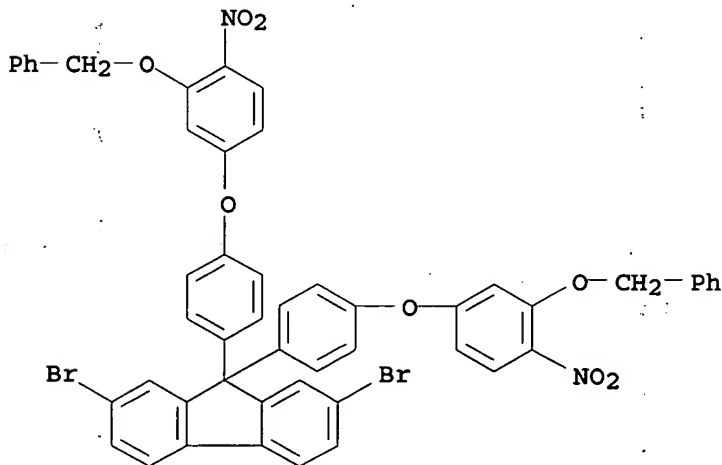
resin

precursors for resin films with good heat resistance and semiconductor devices)

- IT Cardo polymers  
 RL: IMF (Industrial manufacture); POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (polyamide-polyethers; preparation of benzoxazole resin precursors for resin films with good heat resistance and semiconductor devices)
- IT Cardo polymers  
 RL: IMF (Industrial manufacture); POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (polyamides; preparation of benzoxazole resin precursors for resin films with good heat resistance and semiconductor devices)
- IT Polyethers, uses  
 RL: IMF (Industrial manufacture); POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (polybenzoxazole-, blend with polybenzoxazoles; preparation of benzoxazole resin precursors for resin films with good heat resistance and semiconductor devices)
- IT Polyethers, uses  
 RL: IMF (Industrial manufacture); POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (polybenzoxazole-, cardo; preparation of benzoxazole resin precursors for resin films with good heat resistance and semiconductor devices)
- IT Polyoxyalkylenes, uses  
 RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (polybenzoxazole-; preparation of benzoxazole resin precursors for resin films with good heat resistance and semiconductor devices)
- IT Cardo polymers  
 RL: IMF (Industrial manufacture); POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (polybenzoxazole-polyether-; preparation of benzoxazole resin precursors for resin films with good heat resistance and semiconductor devices)
- IT Cardo polymers  
 RL: IMF (Industrial manufacture); POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (polybenzoxazoles; preparation of benzoxazole resin precursors for resin films with good heat resistance and semiconductor devices)
- IT Polybenzoxazoles  
 RL: IMF (Industrial manufacture); POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (polyether-, blend with polybenzoxazoles; preparation of benzoxazole resin precursors for resin films with good heat resistance and semiconductor devices)
- IT Polyamides, uses  
 Polybenzoxazoles  
 RL: IMF (Industrial manufacture); POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (polyether-, cardo; preparation of benzoxazole resin precursors for resin films with good heat resistance and semiconductor devices)
- IT Polyamides, preparation  
 RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT

- (Reactant or reagent)  
(polyether-, hydroxy-containing, precursors; preparation of benzoxazole resin precursors for resin films with good heat resistance and semiconductor devices)
- IT Semiconductor devices  
(preparation of benzoxazole resin precursors for resin films with good heat resistance and semiconductor devices)
- IT Polybenzoxazoles  
RL: IMF (Industrial manufacture); POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(preparation of benzoxazole resin precursors for resin films with good heat resistance and semiconductor devices)
- IT 26010-74-2P 29186-77-4P 846543-91-7P 846543-92-8P  
RL: IMF (Industrial manufacture); POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(blend with polybenzoxazole; preparation of benzoxazole resin precursors for resin films with good heat resistance and semiconductor devices)
- IT 23351-91-9P, 5-Bromoisophthalic acid 51760-21-5P, 5-Bromoisophthalic acid dimethyl ester 92176-81-3P 160156-30-9P, Dimethyl 5-(4-iodophenoxy)isophthalate 168619-21-4P 208657-08-3P, Dimethyl 5-(4-aminophenoxy)isophthalate 208657-09-4P 217655-36-2P 393543-03-8P, 4-[3,5-Bis(methoxycarbonyl)phenyl]-2-methyl-3-butyn-1-ol 393543-04-9P 393543-14-1P 406680-57-7P, 9,9-Bis(3-nitro-4-hydroxyphenyl)fluorene 432025-98-4P 722454-63-9P 753028-50-1P 753028-51-2P 753028-52-3P 753028-58-9P 753028-59-0P 753028-60-3P 753028-65-8P 753028-66-9P 846543-81-5P 846543-86-0P 846543-87-1P 846543-89-3P 846543-90-6P  
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)  
(intermediate in monomer preparation; preparation of benzoxazole resin precursors for resin films with good heat resistance and semiconductor devices)
- IT 2351-36-2P, 2,6-Naphthalenedicarbonyl dichloride 6423-17-2P 92176-85-7P 359642-31-2P 393543-05-0P 562870-37-5P 753028-53-4P 753028-61-4P 846543-82-6P 846543-88-2P  
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)  
(monomer; preparation of benzoxazole resin precursors for resin films with good heat resistance and semiconductor devices)
- IT 29186-69-4P 846543-95-1DP, reaction products with amino-containing polyoxyalkylenes 846543-95-1P 846543-96-2DP, reaction products with amino-containing polyoxyalkylenes 846543-96-2P 846543-97-3P  
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)  
(precursor; preparation of benzoxazole resin precursors for resin films with good heat resistance and semiconductor devices)
- IT 9046-10-0DP, Polypropylene glycol bis(2-aminopropyl)ether, reaction products with polybenzoxazoles 780791-03-9DP, Ethylene oxide-propylene oxide triblock copolymer bis(2-aminopropyl)ether, reaction products with polybenzoxazoles 846543-79-1DP, reaction products with amino-containing polyoxyalkylenes 846543-79-1P 846543-80-4DP, reaction products with polybenzoxazoles 846543-80-4P 846543-83-7DP, reaction products with amino-containing polyoxyalkylenes 846543-83-7P 846543-84-8DP, reaction products with amino-containing polyoxyalkylenes 846543-84-8P 846543-85-9P 846543-93-9P 846543-94-0P  
RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

- (preparation of benzoxazole resin precursors for resin films with good heat resistance and semiconductor devices)
- IT 115-19-5, 3-Methyl-1-butyn-3-ol 7697-37-2, Nitric acid, reactions  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (preparation of benzoxazole resin precursors for resin films with good heat resistance and semiconductor devices)
- IT 67-56-1, Methanol, reactions 99-31-0, 5-Aminoisophthalic acid  
 350-46-9, 4-Fluoronitrobenzene 358-23-6 536-74-3, Ethynylbenzene  
 1141-38-4, 2,6-Naphthalenedicarboxylic acid 1965-09-9,  
 4,4'-Dihydroxydiphenyl ether 3236-71-3, 9,9-Bis(4-hydroxyphenyl)fluorene  
 6342-72-9, Dimethyl 2-hydroxyterephthalate 7681-11-0, Potassium iodide,  
 reactions 7719-09-7, Thionyl chloride 7726-95-6, Bromine, reactions  
 10035-10-6, Hydrobromic acid, reactions 13036-02-7, 5-Hydroxyisophthalic  
 acid dimethyl ester 13185-00-7 20638-07-7, 9,9-Bis(3-amino-4-  
 hydroxyphenyl)fluorene 106120-04-1, 5-Bromoresorcinol 129464-01-3  
 169169-89-5, 9,9-Bis(4-hydroxyphenyl)-2,7-dibromofluorene  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (reactant in monomer preparation; preparation of benzoxazole resin  
 precursors for resin films with good heat resistance and semiconductor  
 devices)
- IT 753028-65-8P  
 RL: IMF (Industrial manufacture); RCT (Reactant); PREP  
 (Preparation); RACT (Reactant or reagent)  
 (intermediate in monomer preparation; preparation of benzoxazole resin  
 precursors for resin films with good heat resistance and semiconductor  
 devices)
- RN 753028-65-8 HCAPLUS  
 CN 9H-Fluorene, 2,7-dibromo-9,9-bis[4-[4-nitro-3-(  
 phenylmethoxy)phenoxy]phenyl]- (9CI) (CA INDEX NAME)



RE.CNT 12 THERE ARE 12 CITED REFERENCES AVAILABLE FOR THIS RECORD  
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L21 ANSWER 2 OF 41 HCAPLUS COPYRIGHT 2005 ACS on STN  
 AN 2004:738900 HCAPLUS  
 DN 141:243966  
 TI Bis(aminophenol) derivatives useful as monomers for  
 heat-resistant condensation polymers  
 IN Fujimoto, Masanori; Enoki, Naoshi  
 PA Sumitomo Bakelite Co., Ltd., Japan

KATHLEEN FULLER EIC 1700 REMSON 4B28 571/272-2505

SO Jpn. Kokai Tokkyo Koho, 24 pp.

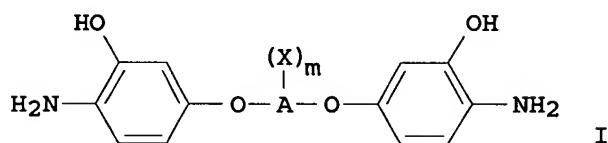
CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2004250438	A2	20040909	JP 2004-10371	20040119
PRAI	JP 2003-22354	A	20030130		
OS	MARPAT 141:243966				
GI					



AB The derivs. are of I type compds. (X = phenylethynyl, naphthylethynyl, anthrylethynyl, quinolyethynyl, quinoxalyethynyl, ethynyl, alkylethynyl, propargyl ether group; A = aromatic group; m = 1-4). Thus, an example of the I type compds. is 1,3-bis(3-hydroxy-4-aminophenoxy)-5-phenylethynylbenzene which can be prepared by a 4-steps synthesis.

IC ICM C07C217-90

CC 35-2 (Chemistry of Synthetic High Polymers)

Section cross-reference(s): 45

ST bisaminophenol phenylethynylbenzene condensation polymer monomer manuf

IT Amines, preparation

RL: IMF (Industrial manufacture); PREP (Preparation)  
(diamines, monomers; manufacture of bis(aminophenol) derivs.  
useful for heat-resistant condensation polymers)

IT Monomers

RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT  
(Reactant or reagent)  
(manufacture of bis(aminophenol) derivs. useful for heat-resistant  
condensation polymers)

IT 753028-50-1P 753028-51-2P 753028-52-3P 753028-54-5P  
753028-55-6P 753028-56-7P 753028-58-9P 753028-59-0P 753028-60-3P  
753028-62-5P 753028-63-6P 753028-65-8P 753028-66-9P  
753028-67-0P

RL: IMF (Industrial manufacture); RCT (Reactant); PREP  
(Preparation); RACT (Reactant or reagent)  
(manufacture of bis(aminophenol) derivs. useful for heat-resistant  
condensation polymers)

IT 84-59-3, 2,6-Dibromo-1,5-dihydroxynaphthalene 115-19-5,  
2-Methyl-3-butyn-2-ol 536-74-3, Ethynylbenzene 13185-00-7,  
6,6'-Dibromo-1,1'-bi-2-naphthol 106120-04-1, 5-Bromoresorcinol  
129464-01-3, 2-Benzyloxy-4-fluoronitrobenzene 169169-89-5,  
9,9-Bis(4-hydroxyphenyl)-2,7-dibromofluorene

RL: RCT (Reactant); RACT (Reactant or reagent)  
(manufacture of bis(aminophenol) derivs. useful for heat-resistant  
condensation polymers)

IT 753028-53-4P 753028-57-8P 753028-61-4P 753028-64-7P 753028-68-1P

RL: IMF (Industrial manufacture); PREP (Preparation)  
(monomers; manufacture of bis(aminophenol) derivs. useful for  
heat-resistant condensation polymers)

IT 753028-54-5P 753028-65-8P

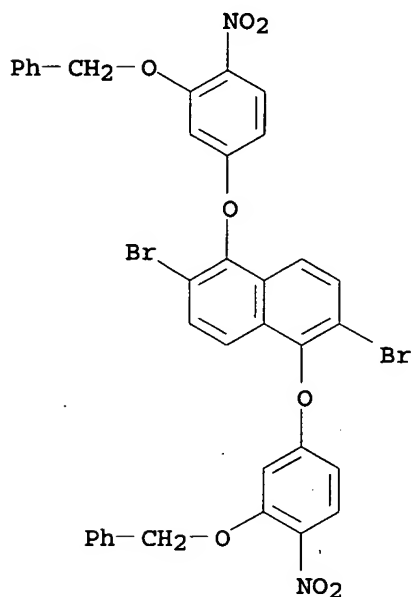
RL: IMF (Industrial manufacture); RCT (Reactant); PREP

(Preparation); RACT (Reactant or reagent)

(manufacture of bis(aminophenol) derivs. useful for heat-resistant condensation polymers)

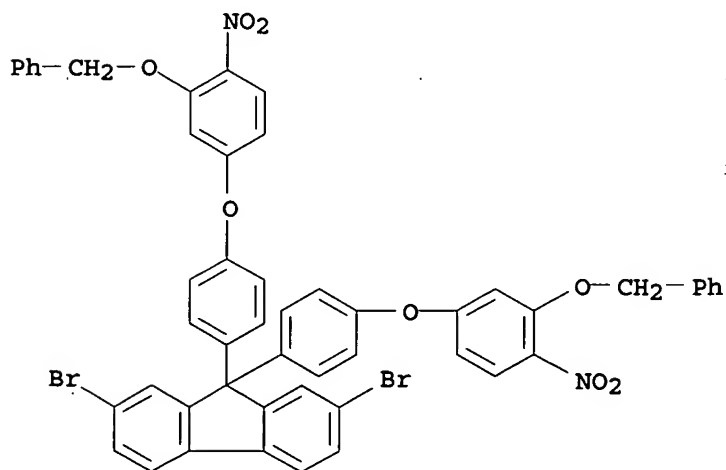
RN 753028-54-5 HCAPLUS

CN Naphthalene, 2,6-dibromo-1,5-bis[4-nitro-3-(phenylmethoxy)phenoxy] - (9CI)  
(CA INDEX NAME)



RN 753028-65-8 HCAPLUS

CN 9H-Fluorene, 2,7-dibromo-9,9-bis[4-[4-nitro-3-(phenylmethoxy)phenoxy]phenyl] - (9CI) (CA INDEX NAME)



L21 ANSWER 3 OF 41 HCAPLUS COPYRIGHT 2005 ACS on STN

AN 2004:411608 HCAPLUS

KATHLEEN FULLER EIC 1700 REMSON 4B28 571/272-2505

DN 140:407263  
 TI Crosslinkable group-containing aromatic aminophenols and their manufacture  
 IN Izumi, Atsushi; Matsutani, Mihoko; Yoshihashi, Ayako; Murayama, Kazumoto  
 PA Sumitomo Bakelite Co., Ltd., Japan  
 SO Jpn. Kokai Tokkyo Koho, 29 pp.  
 CODEN: JKXXAF

DT Patent  
 LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2004143143	A2	20040520	JP 2003-199837	20030722
PRAI	JP 2002-214470	A	20020723		
	JP 2002-220847	A	20020730		
	JP 2002-252108	A	20020829		

OS MARPAT 140:407263

AB Title compds. (A1)nC6H5-nCONHX(OH)2NHCOC6H5-n(A2)n [I; A1, A2 = acetylene bond-containing organic group; n = 1-5; X = tetravalent aromatic group (structures

given)] are manufactured by amidation of H2NX(OH)2NH2 (X = same as above) with (A)nC6H5-nCOCl (A = same as A1 or A2 in I; n = 1-5). I are useful as monomers for polymers showing high heat resistance and elastic modulus (no data). Thus, bis(3-amino-4-hydroxyphenyl) ether was amidated by 4-ethynylbenzoyl chloride in N-methylpyrrolidone at 0-5° for 2 h to give 88.9% bis[3-(4-ethynyl)benzoylamino-4-hydroxyphenyl] ether.

IC ICM C07C233-75

ICS C07C231-02; C07C317-40; C07B061-00

CC 35-2 (Chemistry of Synthetic High Polymers)  
 Section cross-reference(s): 25

ST crosslinkable acetylenic arom aminophenol manuf monomer

IT 688737-04-4P 688737-05-5P 688737-06-6P 688737-07-7P  
 688737-08-8P 688737-09-9P 688737-10-2P 688737-11-3P  
 688737-12-4P 688737-13-5P 688737-14-6P 688737-15-7P  
 688737-16-8P 688737-17-9P 688737-18-0P

RL: IMF (Industrial manufacture); PREP (Preparation)

(manufacture of crosslinkable group-containing aromatic aminophenols)

IT 2373-98-0 4194-40-5, 3,3'-Diamino-4,4'-dihydroxybiphenyl 6423-17-2  
 20638-07-7, 9,9-Bis(3-amino-4-hydroxyphenyl)fluorene 25851-08-5,  
 4-Phenylethynylbenzoyl chloride 62480-31-3, 4-Ethynylbenzoyl chloride  
 182047-76-3 359642-31-2

RL: RCT (Reactant); RACT (Reactant or reagent)

(manufacture of crosslinkable group-containing aromatic aminophenols)

IT 688737-07-7P 688737-12-4P 688737-17-9P

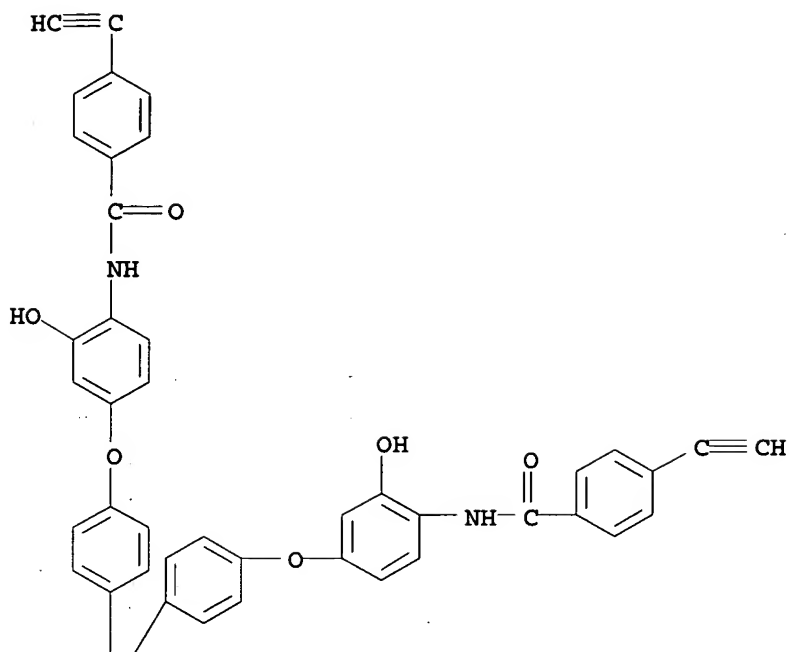
RL: IMF (Industrial manufacture); PREP (Preparation)

(manufacture of crosslinkable group-containing aromatic aminophenols)

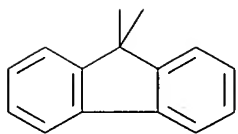
RN 688737-07-7 HCAPLUS

CN Benzamide, N,N'-[9H-fluoren-9-ylidenebis[4,1-phenyleneoxy(2-hydroxy-4,1-phenylene)]]bis[4-ethynyl- (9CI) (CA INDEX NAME)

PAGE 1-A



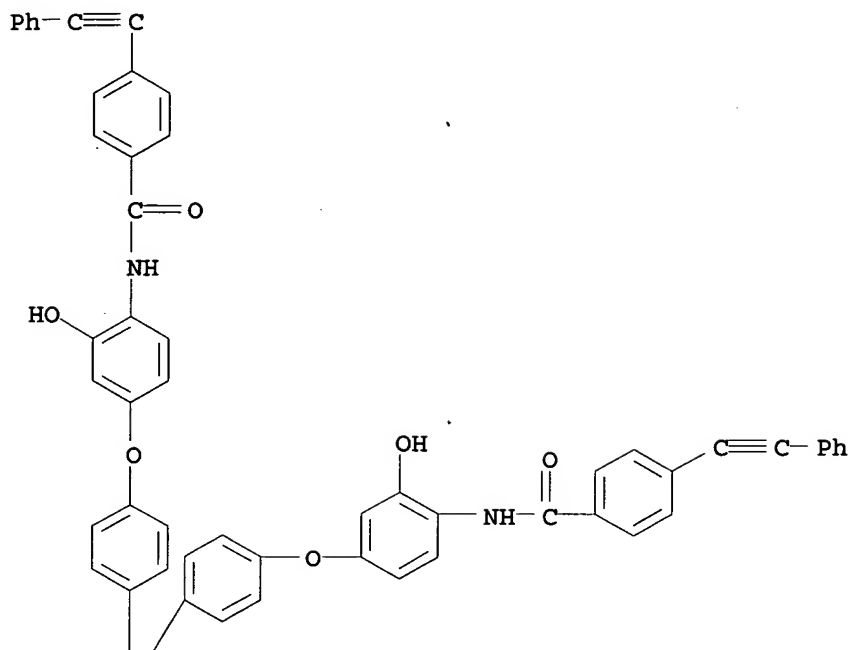
PAGE 2-A



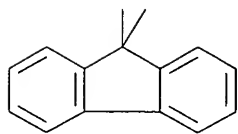
RN 688737-12-4 HCAPLUS  
CN Benzamide, N,N'-[9H-fluoren-9-ylidenebis[4,1-phenyleneoxy(2-hydroxy-4,1-phenylene)]]bis[4-(phenylethynyl)- (9CI) (CA INDEX NAME)



PAGE 1-A

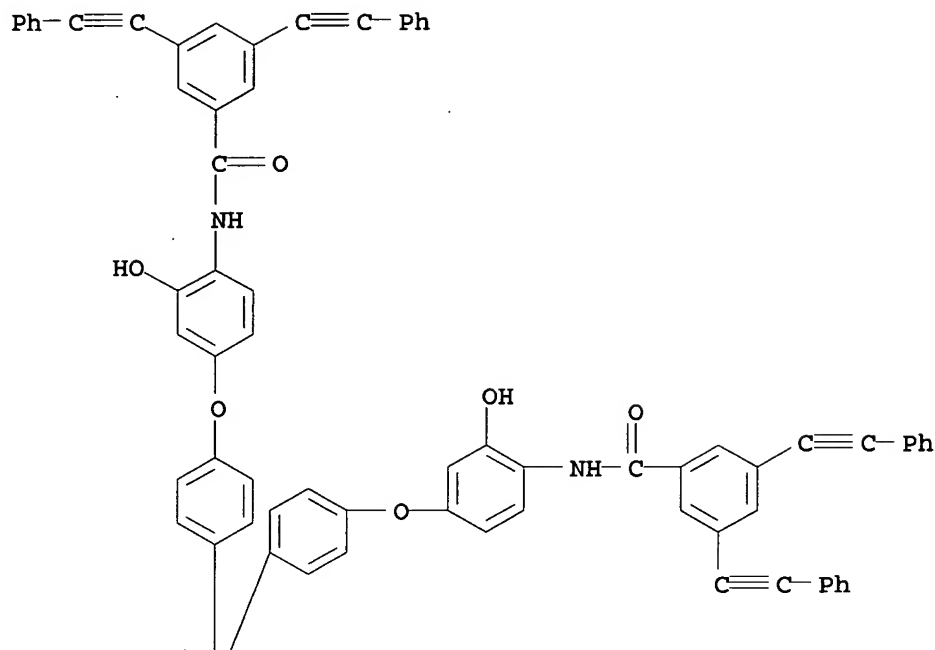


PAGE 2-A

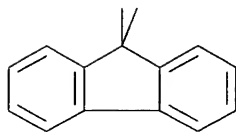


RN 688737-17-9 HCAPLUS  
CN Benzamide, N,N'-[9H-fluoren-9-ylidenebis[4,1-phenyleneoxy(2-hydroxy-4,1-phenylene)]]bis[3,5-bis(phenylethynyl)- (9CI) (CA INDEX NAME)

PAGE 1-A



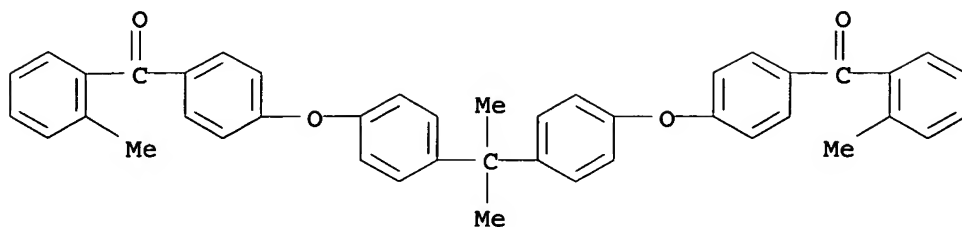
PAGE 2-A



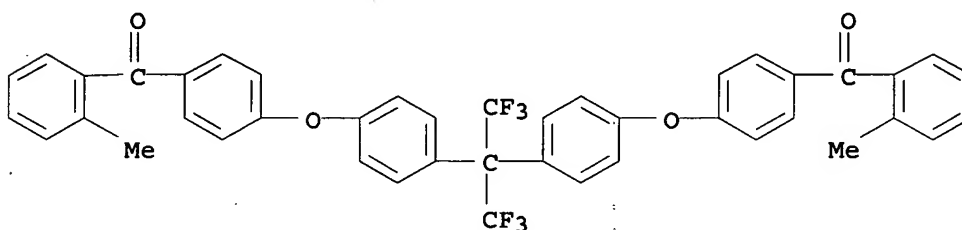
L21 ANSWER 4 OF 41 HCAPLUS COPYRIGHT 2005 ACS on STN  
 AN 2004:234595 HCAPLUS  
 DN 141:24338  
 TI Diels-Alder trapping of photochemically generated dienes with acrylic esters: a novel approach to photocured polymer film development  
 AU Ilhan, Faysal; Tyson, Daniel S.; Smith, Deedee; Meador, Mary Ann B.; Meador, Michael A.  
 CS Ohio Aerospace Institute, Cleveland, OH, 44142, USA  
 SO Polymer Preprints (American Chemical Society, Division of Polymer Chemistry) (2004), 45(1), 883-884  
 CODEN: ACPPAY; ISSN: 0032-3934  
 PB American Chemical Society, Division of Polymer Chemistry  
 DT Journal; (computer optical disk)  
 LA English  
 AB A novel photocuring process for development of polymer films was approached. A series of mols. with multi o-methylphenyl ketone functionalities was prepared These mols. as photoreactive **monomers** were investigated to obtain polyester films through Diels-Alder cycloaddns.  
 CC 37-3 (Plastics Manufacture and Processing)

Section cross-reference(s): 35

- ST methylphenyl ketone monomer polyester Diels Alder cycloaddn  
photocuring film
- IT Polymerization  
(cyclopolymn.; development of photocured polymer films by Diels-Alder  
cycloaddn. of methylphenyl ketones with acrylic esters)
- IT Glass transition temperature  
(development of photocured polymer films by Diels-Alder cycloaddn. of  
methylphenyl ketones with acrylic esters)
- IT Crosslinking  
(photochem.; development of photocured polymer films by Diels-Alder  
cycloaddn. of methylphenyl ketones with acrylic esters)
- IT Polyethers, preparation  
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
(polyester-, fluorine-containing, polyoxyalkylene-; development of  
photocured polymer films by Diels-Alder cycloaddn. of methylphenyl  
ketones with acrylic esters)
- IT Fluoropolymers, preparation  
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
(polyester-polyether-, polyoxyalkylene-; development of photocured  
polymer films by Diels-Alder cycloaddn. of methylphenyl ketones with  
acrylic esters)
- IT Polyoxyalkylenes, preparation  
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
(polyester-polyether-; development of photocured polymer films by  
Diels-Alder cycloaddn. of methylphenyl ketones with acrylic esters)
- IT Polyethers, preparation  
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
(polyester-polyoxyalkylene-; development of photocured polymer films by  
Diels-Alder cycloaddn. of methylphenyl ketones with acrylic esters)
- IT Polyesters, preparation  
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
(polyether-, fluorine-containing, polyoxyalkylene-; development of  
photocured polymer films by Diels-Alder cycloaddn. of methylphenyl  
ketones with acrylic esters)
- IT Polyesters, preparation  
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
(polyether-polyoxyalkylene-; development of photocured polymer films by  
Diels-Alder cycloaddn. of methylphenyl ketones with acrylic esters)
- IT 698391-92-3P 698391-93-4P 698391-94-5P 698391-95-6P 698391-96-7P  
698391-97-8P 698391-98-9P 698391-99-0P 698392-01-7P 698392-02-8P  
698392-03-9P 698392-04-0P  
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
(development of photocured polymer films by Diels-Alder cycloaddn. of  
methylphenyl ketones with acrylic esters)
- IT 31968-85-1P 698391-87-6P 698391-88-7P 698391-89-8P  
698391-90-1P 698391-91-2P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP  
(Preparation); RACT (Reactant or reagent)  
(monomer; development of photocured polymer films by  
Diels-Alder cycloaddn. of methylphenyl ketone with acrylic esters)
- IT 698391-90-1P 698391-91-2P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP  
(Preparation); RACT (Reactant or reagent)  
(monomer; development of photocured polymer films by  
Diels-Alder cycloaddn. of methylphenyl ketone with acrylic esters)
- RN 698391-90-1 HCAPLUS
- CN Methanone, [(1-methylethylidene)bis(4,1-phenyleneoxy-4,1-phenylene)]bis[(2-  
methylphenyl)-(9CI) (CA INDEX NAME)



RN 698391-91-2 HCAPLUS  
 CN Methanone, [[2,2,2-trifluoro-1-(trifluoromethyl)ethylidene]bis(4,1-phenyleneoxy-4,1-phenylene)]bis[(2-methylphenyl)- (9CI) (CA INDEX NAME)



RE.CNT 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD  
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L21 ANSWER 5 OF 41 HCAPLUS COPYRIGHT 2005 ACS on STN  
 AN 2003:936034 HCAPLUS  
 DN 140:128763  
 TI Synthesis and Characterization of Phthalazinone Containing Poly(arylene ether)s, Poly(arylene thioether)s, and Poly(arylene sulfone)s via a Novel N-C Coupling Reaction  
 AU Wang, S. J.; Meng, Y. Z.; Hlil, A. R.; Hay, A. S.  
 CS School of Physics Engineering, Sun Yat-Sen University, Guangzhou, 510275, Peop. Rep. China  
 SO Macromolecules (2004), 37(1), 60-65  
 CODEN: MAMOBX; ISSN: 0024-9297  
 PB American Chemical Society  
 DT Journal  
 LA English  
 AB High mol. weight phthalazinone containing poly(arylene ether)s, poly(arylene thioether)s, and poly(arylene sulfone)s with very high glass transition temps. were synthesized from a series of new bisphthalazinone **monomers**. Bisphthalazinone **monomers** were synthesized from 2-(4-chlorobenzoyl)benzoic acid in high yields. Poly(arylene ether)s and poly(arylene thioether)s were synthesized in N,N'-dimethylacetamide (DMAc) in the presence of anhydrous K<sub>2</sub>CO<sub>3</sub> by a nucleophilic substitution reaction between these bisphthalazinone **monomers** and activated difluoro compds. The poly(arylene thioether)s were further oxidized to form poly(arylene sulfone)s, which would be very difficult, if not impossible, to synthesize by other method. All synthesized polymers have extremely high T<sub>gs</sub> and thermal stability as determined from DSC and TGA anal. Poly(arylene sulfone)s have the highest T<sub>gs</sub> ranging from 288 to 333 °C. The poly(arylene ether)s and poly(arylene thioether)s described, having inherent viscosities in the range of 0.37-1.01 dL/g, are soluble in chlorinated solvents such as chloroform and could be cast into flexible films from solution In contrast to their precursors, the

poly(arylene sulfone)s described are not soluble in chloroform but are soluble in dipolar aprotic solvents such as DMAc.

CC 35-5 (Chemistry of Synthetic High Polymers)

ST phthalazinone contg polyether polythioether polysulfone prepn

IT Polyketones  
 Polysulfones, preparation  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (polyether-, fluorine-containing; preparation and characterization of phthalazinone containing poly(arylene ether), poly(arylene thioether), and poly(arylene sulfone) via N-C coupling reaction)

IT Polyketones  
 Polysulfones, preparation  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (polyether-; preparation and characterization of phthalazinone containing poly(arylene ether), poly(arylene thioether), and poly(arylene sulfone) via N-C coupling reaction)

IT Fluoropolymers, preparation  
 Polythioethers  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (polyether-polyketone-; preparation and characterization of phthalazinone containing poly(arylene ether), poly(arylene thioether), and poly(arylene sulfone) via N-C coupling reaction)

IT Fluoropolymers, preparation  
 Polythioethers  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (polyether-polysulfone-; preparation and characterization of phthalazinone containing poly(arylene ether), poly(arylene thioether), and poly(arylene sulfone) via N-C coupling reaction)

IT Polyketones  
 Polysulfones, preparation  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (polyether-polythioether-; preparation and characterization of phthalazinone containing poly(arylene ether), poly(arylene thioether), and poly(arylene sulfone) via N-C coupling reaction)

IT Polyethers, preparation  
 Polythioethers  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (polyketone-, fluorine-containing; preparation and characterization of phthalazinone containing poly(arylene ether), poly(arylene thioether), and poly(arylene sulfone) via N-C coupling reaction)

IT Polyethers, preparation  
 Polythioethers  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (polyketone-; preparation and characterization of phthalazinone containing poly(arylene ether), poly(arylene thioether), and poly(arylene sulfone) via N-C coupling reaction)

IT Fluoropolymers, preparation  
 Polyethers, preparation  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (polyketone-polythioether-; preparation and characterization of phthalazinone containing poly(arylene ether), poly(arylene thioether), and poly(arylene sulfone) via N-C coupling reaction)

IT Polyethers, preparation  
 Polythioethers  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (polysulfone-, fluorine-containing; preparation and characterization of phthalazinone containing poly(arylene ether), poly(arylene thioether), and poly(arylene sulfone) via N-C coupling reaction)

IT Polyethers, preparation  
 Polythioethers

RL: SPN (Synthetic preparation); PREP (Preparation)  
 (polysulfone-; preparation and characterization of phthalazinone containing  
 poly(arylene ether), poly(arylene thioether), and poly(arylene sulfone)  
 via N-C coupling reaction)

IT Fluoropolymers, preparation  
 Polyethers, preparation  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (polysulfone-polythioether-; preparation and characterization of  
 phthalazinone containing poly(arylene ether), poly(arylene thioether), and  
 poly(arylene sulfone) via N-C coupling reaction)

IT Polyketones  
 Polysulfones, preparation  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (polythioether-, fluorine-containing; preparation and characterization of  
 phthalazinone containing poly(arylene ether), poly(arylene thioether), and  
 poly(arylene sulfone) via N-C coupling reaction)

IT Polyketones  
 Polysulfones, preparation  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (polythioether-; preparation and characterization of phthalazinone  
 containing  
 poly(arylene ether), poly(arylene thioether), and poly(arylene sulfone)  
 via N-C coupling reaction)

IT Glass transition temperature  
 Polymerization  
 (preparation and characterization of phthalazinone containing poly(arylene  
 ether), poly(arylene thioether), and poly(arylene sulfone) via N-C  
 coupling reaction)

IT 80-05-7, Bisphenol A, reactions 85-56-3, 2-(4-Chlorobenzoyl)benzoic acid  
 1478-61-1, 4,4'-(Hexafluoroisopropylidene)diphenol 1965-09-9,  
 4,4'-Dihydroxydiphenyl ether 7803-57-8, Hydrazine monohydrate  
 17527-79-6, 4,4'-Oxybis(benzenethiol)  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (in preparation of bisphthalazinone monomers)

IT 599205-78-4P 599205-79-5P 599205-80-8P 599205-83-1P 599205-84-2P  
 599205-85-3P 599205-88-6P 599205-89-7P 599205-90-0P 599205-93-3P  
 599205-94-4P 599205-95-5P 599205-98-8P 599205-99-9P 599206-00-5P  
 599206-03-8P 599206-04-9P 599206-05-0P 649572-64-5P 649572-66-7P  
 649572-67-8P 649572-68-9P 649572-70-3P 649572-71-4P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (preparation and characterization of)

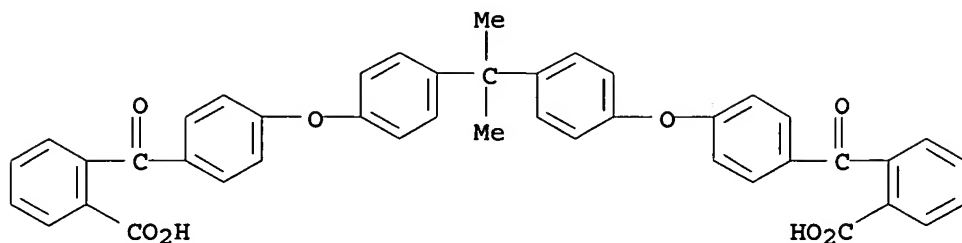
IT 599205-73-9P 599205-74-0P 599205-75-1P 649572-48-5P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
 (Reactant or reagent)  
 (preparation and polymerization of)

IT 599205-68-2P 599205-69-3P 599205-70-6P 649572-32-7P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP  
 (Preparation); RACT (Reactant or reagent)  
 (preparation and reaction with hydrazine monohydrate)

IT 599205-68-2P 599205-69-3P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP  
 (Preparation); RACT (Reactant or reagent)  
 (preparation and reaction with hydrazine monohydrate)

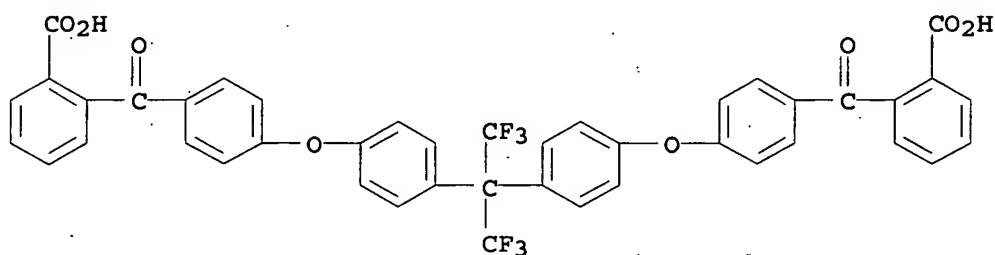
RN 599205-68-2 HCAPLUS

CN Benzoic acid, 2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxy-4,1-  
 phenylenecarbonyl)]bis- (9CI) (CA INDEX NAME)



RN 599205-69-3 HCAPLUS

CN Benzoic acid, 2,2'-[[2,2,2-trifluoro-1-(trifluoromethyl)ethylidene]bis(4,1-phenyleneoxy-4,1-phenylenecarbonyl)]bis- (9CI) (CA INDEX NAME)



RE.CNT 23 THERE ARE 23 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L21 ANSWER 6 OF 41 HCAPLUS COPYRIGHT 2005 ACS on STN

AN 2003:620193 HCAPLUS

DN 139:246276

TI Synthesis and characterization of phthalazinone containing poly(arylene ether)s via a novel N-C coupling reaction

AU Wang, S. J.; Meng, Y. Z.; Tjong, S. C.; Hlil, A. R.; Hay, A. S.

CS Guangzhou Institute of Chemistry, Chinese Academy of Sciences, Canton, 510650, Peop. Rep. China

SO Journal of Polymer Science, Part A: Polymer Chemistry (2003), 41(16), 2481-2490

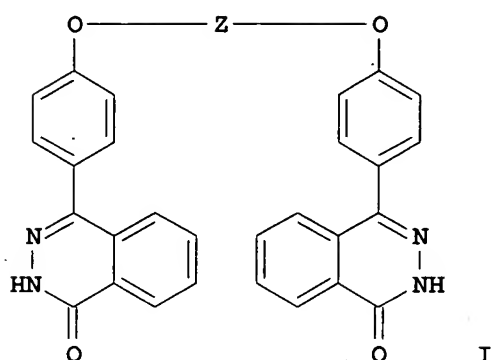
CODEN: JPACEC; ISSN: 0887-624X

PB John Wiley & Sons, Inc.

DT Journal

LA English

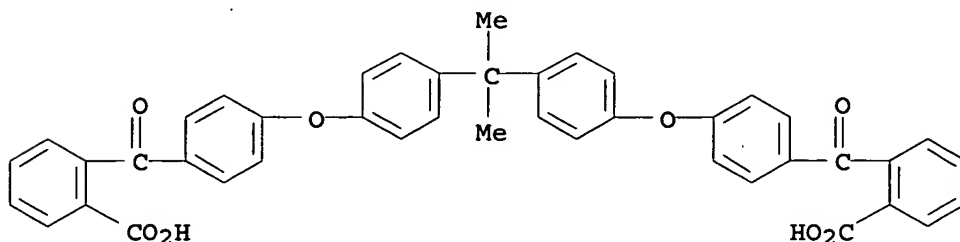
GI



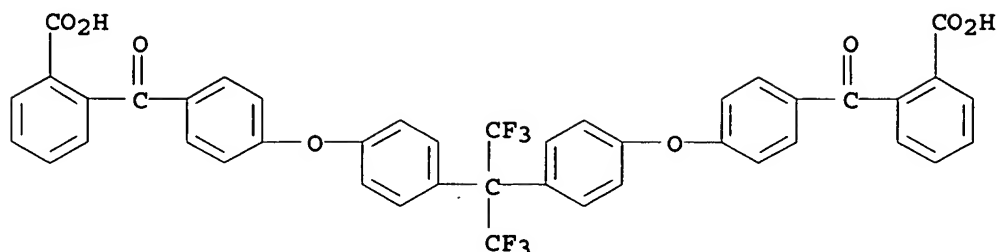
- AB High-mol.-weight poly(phthalazinone)s with very high glass transition temps. (Tg's) were synthesized via a novel N-C coupling reaction. Five bisphthalazinone monomers having the structure (I; Z = p-C<sub>6</sub>H<sub>4</sub>, p-C<sub>6</sub>H<sub>4</sub>C<sub>6</sub>H<sub>4</sub>-p, p-C<sub>6</sub>H<sub>4</sub>CMe<sub>2</sub> C<sub>6</sub>H<sub>4</sub>-p, p-C<sub>6</sub>H<sub>4</sub>C(CF<sub>3</sub>)<sub>2</sub>C<sub>6</sub>H<sub>4</sub>-p, or p-C<sub>6</sub>H<sub>4</sub>OC<sub>6</sub>H<sub>4</sub>-p) were synthesized from 2-(4-chlorobenzoyl) phthalic acid in two steps. Poly(phthalazinone)s, having inherent viscosities in the range of 0.34-0.91 dL/g, were prepared by the reaction of the bisphthalazinone monomers with an activated aryl halide in a dipolar aprotic solvent in the presence of potassium carbonate. The poly(phthalazinone)s exhibited Tg's >230°. The polymer synthesized from di-Ph biphenol and bis(4-fluorophenyl) sulfone demonstrated the highest Tg of 297°. Thermal stabilities of the poly(phthalazinone)s were determined by thermogravimetric anal. All the poly(phthalazinone)s showed a similar pattern of decomposition with no weight loss below 450° in N. The temps. of 5% weight loss were observed to be about 500°. The poly(phthalazinone)s containing 4,4'-isopropylidenediphenol and 4,4'-(hexafluoroisopropylidene) diphenol and di-Ph ether linkages were soluble in chlorinated solvents such as chloroform. Other poly(phthalazinone)s were soluble in dipolar aprotic solvents such as N,N'-dimethylacetamide. The soluble poly(phthalazinone)s can be cast as flexible films from solution
- CC 35-5 (Chemistry of Synthetic High Polymers)
- ST phthalazinone group contg arom polyether; bisphthalazinone polymn. aryl fluoride
- IT Polymerization  
(of bisphthalazinones with aryl fluorides in synthesis of phthalazinone-containing poly(arylene ether)s)
- IT Polyketones  
Polysulfones, preparation  
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
(polyether-, aromatic, phthalazinone group-containing; synthesis and characterization of phthalazinone-containing poly(arylene ether)s via novel N-C coupling reaction)
- IT Polyethers, preparation  
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
(polyketone-, aromatic, phthalazinone group-containing; synthesis and characterization of phthalazinone-containing poly(arylene ether)s via novel N-C coupling reaction)
- IT Polyethers, preparation  
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
(polysulfone-, aromatic, phthalazinone group-containing; synthesis and characterization of phthalazinone-containing poly(arylene ether)s via novel N-C coupling reaction)



- IT Glass transition temperature  
Solubility  
Thermal stability  
(synthesis and characterization of phthalazinone-containing poly(arylene ether)s via novel N-C coupling reaction)
- IT 85-57-4P, 2-(4-Hydroxybenzoyl) benzoic acid 599205-66-0P 599205-67-1P  
599205-68-2P 599205-69-3P 599205-70-6P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
(intermediate; in preparation of bisphthalazinone monomers for synthesis of poly(phthalazinone)s)
- IT 599205-71-7P 599205-72-8P 599205-73-9P 599205-74-0P 599205-75-1P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
(monomer; for synthesis of phthalazinone-containing poly(arylene ether)s via novel N-C coupling reaction)
- IT 152594-70-2P  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(monomer; two-step synthesis of)
- IT 80-05-7, Bisphenol A, reactions 85-56-3, 2-(4-Chlorobenzoyl)benzoic acid  
92-88-6, 4,4'-Dihydroxydiphenyl 123-31-9, Hydroquinone, reactions  
302-01-2, Hydrazine, reactions 1478-61-1 1965-09-9,  
4,4'-Dihydroxydiphenyl ether  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(reactant; in preparation of bisphthalazinone monomers for synthesis of poly(phthalazinone)s)
- IT 599205-76-2P 599205-77-3P 599205-78-4P 599205-79-5P 599205-80-8P  
599205-81-9P 599205-82-0P 599205-83-1P 599205-84-2P 599205-85-3P  
599205-86-4P 599205-87-5P 599205-88-6P 599205-89-7P 599205-90-0P  
599205-91-1P 599205-92-2P 599205-93-3P 599205-94-4P 599205-95-5P  
599205-96-6P 599205-97-7P 599205-98-8P 599205-99-9P 599206-00-5P  
599206-01-6P 599206-02-7P 599206-03-8P 599206-04-9P 599206-05-0P  
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
(synthesis and characterization of phthalazinone-containing poly(arylene ether)s via novel N-C coupling reaction)
- IT 599205-68-2P 599205-69-3P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
(intermediate; in preparation of bisphthalazinone monomers for synthesis of poly(phthalazinone)s)
- RN 599205-68-2 HCAPLUS
- CN Benzoic acid, 2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxy-4,1-phenylenecarbonyl)]bis- (9CI) (CA INDEX NAME)



- RN 599205-69-3 HCAPLUS
- CN Benzoic acid, 2,2'-[[2,2,2-trifluoro-1-(trifluoromethyl)ethylidene]bis(4,1-phenyleneoxy-4,1-phenylenecarbonyl)]bis- (9CI) (CA INDEX NAME)



RE.CNT 23 THERE ARE 23 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L21 ANSWER 7 OF 41 HCAPLUS COPYRIGHT 2005 ACS on STN  
AN 2003:568621 HCAPLUS  
DN 139:118408  
TI Halogenated aromatic compound, (co)polymer thereof, and proton-conductive membrane comprising same  
IN Yamakawa, Yoshitaka; Takahashi, Masayuki; Goto, Kohei  
PA JSR Corporation, Japan  
SO Eur. Pat. Appl., 33 pp.  
CODEN: EPXXDW  
DT Patent  
LA English  
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1329444	A1	20030723	EP 2003-1191	20030121
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK				
JP 2003286339	A2	20031010	JP 2003-9485	20030117
US 2003173547	A1	20030918	US 2003-347336	20030121
US 6833426	B2	20041221		
PRAI JP 2002-13450	A	20020122		

AB A halogenated aromatic compound, a polyarylene (co)polymer obtained by the polymerization of such a halogenated aromatic compound as a monomer component, and a proton-conductive membrane made of a sulfonation product of such a (co)polymer are disclosed. The halogenated aromatic compound is represented by the following general formula  $R1X1A(X2BX3A)aX4B(X5B)bZ$  (A = electron-withdrawing group; B = electron-donating atom or divalent group; X = halogenated phenylene groups; Z = aryl group; a, b = 1-20). Thus, adding 2,5-dichloro-4'-[4-(4-phenoxy)phenoxy]benzoyl]phenoxybenzophenone 12.3, [4,4'-dichlorobenzophenone 2,2-bis(4-hydroxyphenyl)-1,1,1,3,3,3-hexafluoropropane] (Mn 12,200) 6.83, bis(triphenylphosphine)nickel dichloride 0.589, NaI 0.507, triphenylphosphine 2.73 and Zn 4.08 g to a flask, after purging with N, combining with 54.6 mL N-methylpyrrolidone and heating with stirring at 80° for 3 h gave a polymer which was precipitated and sulfonated to give a conductive polymer. The polymer was soluble in N-methylpyrrolidone and THF and insol. in acetone, methanol, and water. A solvent-cast film made from the sulfonated polymer had good strength and resistance to hot water and Fenton's reagent.

IC ICM C07C049-84  
ICS C07C317-22; C08G065-40; C08G061-12; C08G075-23; C08J005-22  
CC 38-3 (Plastics Fabrication and Uses)  
ST halogenated polyphenyl sulfonation proton conductive membrane manuf; chem hot water resistance membrane sulfonated polyphenyl polymer  
IT Membranes, nonbiological

(manufacture of halogenated aromatic compds. for polymers useful for proton-conductive membrane production)

IT Polyketones  
 RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (polyether-, fluorine-containing; manufacture of halogenated aromatic compds. for polymers useful for proton-conductive membrane production)

IT Fluoropolymers, uses  
 RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (polyether-polyketone-; manufacture of halogenated aromatic compds. for polymers useful for proton-conductive membrane production)

IT Polyoxyphenylenes  
 RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (polyketone-, fluorinated; manufacture of halogenated aromatic compds. for polymers useful for proton-conductive membrane production)

IT Polyethers, uses  
 RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (polyketone-, fluorine-containing; manufacture of halogenated aromatic compds. for polymers useful for proton-conductive membrane production)

IT Polyketones  
 RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (polyoxyphenylene-, fluorinated; manufacture of halogenated aromatic compds. for polymers useful for proton-conductive membrane production)

IT 565228-58-2DP, sulfonated products  
 RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (manufacture of halogenated aromatic compds. for polymers useful for proton-conductive membrane production)

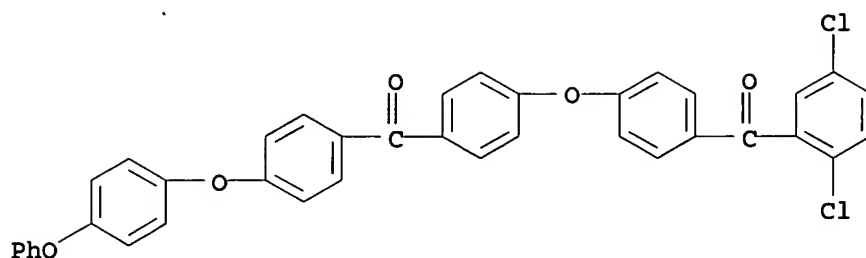
IT 69266-28-0P 122325-09-1P, Bisphenol AF-4,4'-dichlorobenzophenone copolymer 151173-25-0P, 2,5-Dichloro-4'-phenoxybenzophenone 565228-52-6P 565228-55-9P 565228-58-2P  
 RL: IMF (Industrial manufacture); RCT (Reactant); **PREP** (**Preparation**); RACT (Reactant or reagent)  
 (manufacture of halogenated aromatic compds. for polymers useful for proton-conductive membrane production)

IT 101-84-8, Diphenyl ether 403-43-0, 4-Fluorobenzoic acid chloride 831-82-3, 4-Phenoxyphenol 2905-61-5, 2,5-Dichlorobenzoyl chloride  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (manufacture of halogenated aromatic compds. for polymers useful for proton-conductive membrane production)

IT 565228-55-9P  
 RL: IMF (Industrial manufacture); RCT (Reactant); **PREP** (**Preparation**); RACT (Reactant or reagent)  
 (manufacture of halogenated aromatic compds. for polymers useful for proton-conductive membrane production)

RN 565228-55-9 HCAPLUS

CN Methanone, [4-[4-(2,5-dichlorobenzoyl)phenoxy]phenyl][4-(4-phenoxyphenoxy)phenyl]- (9CI) (CA INDEX NAME)



RE.CNT 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

- L21 ANSWER 8 OF 41 HCAPLUS COPYRIGHT 2005 ACS on STN  
AN 2002:858370 HCAPLUS  
DN 138:122914  
TI Synthesis and properties of soluble aromatic poly(ether benzoxazole)s from 9,9-bis[4-(4-amino-3-hydroxyphenoxy)phenyl]fluorene and aromatic dicarboxylic acid chlorides  
AU Imai, Yoshio; Shibasaki, Yuji; Takeuchi, Hisashi; Park, Ki Hong; Kakimoto, Masa-Aki  
CS Department of Organic and Polymeric Materials, Tokyo Institute of Technology, Tokyo, 152, Japan  
SO High Performance Polymers (2002), 14(3), 253-260  
CODEN: HPPOEX; ISSN: 0954-0083  
PB Sage Publications  
DT Journal  
LA English  
AB An ether-containing bis(o-aminophenol) monomer having a bulky diphenylfluorene unit, 9,9-bis[4-(4-amino-3-hydroxyphenoxy)phenyl]fluorene, was synthesized by the reaction of 9,9-bis(4-hydroxyphenyl)fluorene with 2-benzyloxy-4-fluoronitrobenzene giving a bis-nitrobenzene compound, followed by catalytic reduction Diphenylfluorene-containing aromatic poly(ether benzoxazole)s (PEBOs) having inherent viscosities of 0.57-0.74 dL g<sup>-1</sup> were obtained in two steps by the polycondensation of the bis(o-aminophenol) with various aromatic dicarboxylic acid chlorides giving precursor poly(ether o-hydroxyamide)s, and subsequent thermal cyclodehydration. These aromatic PEBOs were soluble on heating in N-methyl-2-pyrrolidone and m-cresol. The glass transition temps. and 10% weight loss temps. of the PEBOs were in the ranges of 258-294°C and 560-580°C, resp., in nitrogen.  
CC 35-5 (Chemistry of Synthetic High Polymers)  
ST bisaminophenol deriv dicarboxylic chloride synthesis diphenylfluorene contg polyether polybenzoxazole; sol thermal property polyether polybenzoxazole  
IT Glass transition temperature  
Solubility  
Thermal stability  
Viscosity  
(of soluble aromatic poly(ether benzoxazole)s from 9,9-bis[4-(4-amino-3-hydroxyphenoxy)phenyl]fluorene and aromatic dicarboxylic acid chlorides)  
IT Polyethers, preparation  
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
(polyamide-, aromatic, fluorene group-containing, cardo; synthesis and properties of soluble aromatic poly(ether benzoxazole)s from 9,9-bis[4-(4-amino-3-hydroxyphenoxy)phenyl]fluorene and aromatic dicarboxylic acid chlorides)  
IT Polysulfones, preparation

- RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
(polyamide-polyether-, aromatic, fluorene group-containing, cardo; synthesis and properties of soluble aromatic poly(ether benzoxazole)s from 9,9-bis[4-(4-amino-3-hydroxyphenoxy)phenyl]fluorene and aromatic dicarboxylic acid chlorides)
- IT Cardo polymers  
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
(polyamide-polyether-polysulfones, aromatic, fluorene group-containing; synthesis and properties of soluble aromatic poly(ether benzoxazole)s from 9,9-bis[4-(4-amino-3-hydroxyphenoxy)phenyl]fluorene and aromatic dicarboxylic acid chlorides)
- IT Cardo polymers  
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
(polyamide-polyethers, aromatic, fluorene group-containing; synthesis and properties of soluble aromatic poly(ether benzoxazole)s from 9,9-bis[4-(4-amino-3-hydroxyphenoxy)phenyl]fluorene and aromatic dicarboxylic acid chlorides)
- IT Polyethers, preparation  
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
(polyamide-polysulfone-, aromatic, fluorene group-containing, cardo; synthesis and properties of soluble aromatic poly(ether benzoxazole)s from 9,9-bis[4-(4-amino-3-hydroxyphenoxy)phenyl]fluorene and aromatic dicarboxylic acid chlorides)
- IT Polyethers, preparation  
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
(polybenzoxazole-, cardo; synthesis and properties of soluble aromatic poly(ether benzoxazole)s from 9,9-bis[4-(4-amino-3-hydroxyphenoxy)phenyl]fluorene and aromatic dicarboxylic acid chlorides)
- IT Polysulfones, preparation  
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
(polybenzoxazole-polyether-, aromatic; synthesis and properties of soluble aromatic poly(ether benzoxazole)s from 9,9-bis[4-(4-amino-3-hydroxyphenoxy)phenyl]fluorene and aromatic dicarboxylic acid chlorides)
- IT Cardo polymers  
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
(polybenzoxazole-polyether-; synthesis and properties of soluble aromatic poly(ether benzoxazole)s from 9,9-bis[4-(4-amino-3-hydroxyphenoxy)phenyl]fluorene and aromatic dicarboxylic acid chlorides)
- IT Polyethers, preparation  
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
(polybenzoxazole-polysulfone-, aromatic; synthesis and properties of soluble aromatic poly(ether benzoxazole)s from 9,9-bis[4-(4-amino-3-hydroxyphenoxy)phenyl]fluorene and aromatic dicarboxylic acid chlorides)
- IT Polyamides, preparation  
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
(polyether-, aromatic, fluorene group-containing, cardo; synthesis and properties of soluble aromatic poly(ether benzoxazole)s from 9,9-bis[4-(4-amino-3-hydroxyphenoxy)phenyl]fluorene and aromatic dicarboxylic acid chlorides)
- IT Polybenzoxazoles  
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
(polyether-, cardo; synthesis and properties of soluble aromatic poly(ether benzoxazole)s from 9,9-bis[4-(4-amino-3-hydroxyphenoxy)phenyl]fluorene and aromatic dicarboxylic acid chlorides)
- IT Polyamides, preparation  
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
(polyether-polysulfone-, aromatic, fluorene group-containing, cardo; synthesis and properties of soluble aromatic poly(ether benzoxazole)s from 9,9-bis[4-(4-amino-3-hydroxyphenoxy)phenyl]fluorene and aromatic dicarboxylic acid chlorides)

9,9-bis[4-(4-amino-3-hydroxyphenoxy)phenyl]fluorene and aromatic dicarboxylic acid chlorides)

IT Polybenzoxazoles  
 RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
 (polyether-polysulfone-, aromatic; synthesis and properties of soluble aromatic  
 poly(ether benzoxazole)s from 9,9-bis[4-(4-amino-3-hydroxyphenoxy)phenyl]fluorene and aromatic dicarboxylic acid chlorides)

IT 3236-71-3, 9,9-Bis(4-hydroxyphenyl)fluorene  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (in reaction with benzyloxyfluoronitrobenzene)

IT 129464-01-3P, 2-Benzyloxy-4-fluoronitrobenzene  
 RL: PNU (Preparation, unclassified); RCT (Reactant); PREP (Preparation);  
 RACT (Reactant or reagent)  
 (in reaction with bishydroxyphenylfluorene)

IT 359820-18-1P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP  
 (Preparation); RACT (Reactant or reagent)  
 (monomer intermediate; preparation of, and in reduction reaction)

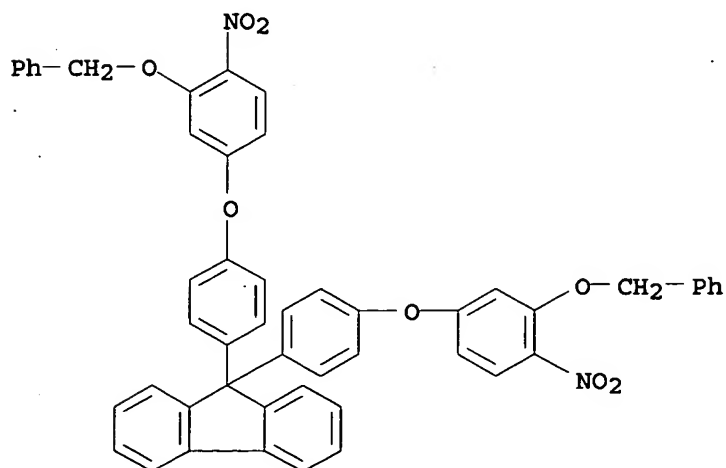
IT 359642-31-2P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
 (Reactant or reagent)  
 (monomer; preparation of by reduction reaction, and in polymerization)

IT 359642-35-6P 359642-37-8P 359862-18-3P 479070-81-0P 479070-82-1P  
 479070-83-2P 488838-66-0P 488838-69-3P 488838-71-7P 488838-72-8P  
 488838-73-9P 488838-74-0P  
 RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
 (synthesis and properties of soluble aromatic poly(ether benzoxazole)s from  
 9,9-bis[4-(4-amino-3-hydroxyphenoxy)phenyl]fluorene and aromatic  
 dicarboxylic acid chlorides)

IT 359820-18-1P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP  
 (Preparation); RACT (Reactant or reagent)  
 (monomer intermediate; preparation of, and in reduction reaction)

RN 359820-18-1 HCAPLUS

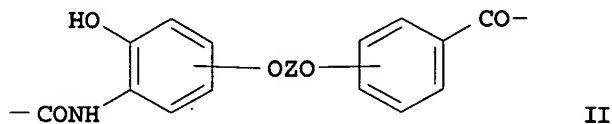
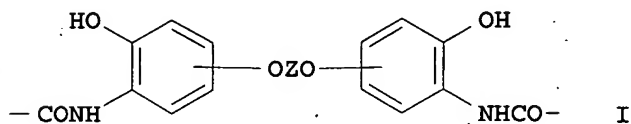
CN 9H-Fluorene, 9,9-bis[4-[4-nitro-3-(phenylmethoxy)phenoxy]phenyl]- (9CI)  
 (CA INDEX NAME)



RE.CNT 22 THERE ARE 22 CITED REFERENCES AVAILABLE FOR THIS RECORD  
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L21 ANSWER 9 OF 41 HCAPLUS COPYRIGHT 2005 ACS on STN  
 AN 2001:676835 HCAPLUS  
 DN 135:242700  
 TI Polybenzoxazole precursors, polybenzoxazoles, and photoresist solutions containing the precursors  
 IN Haussmann, Joerg; Maier, Gerhard; Schmid, Guenter; Sezi, Recai  
 PA Infineon Technologies A.-G., Germany  
 SO PCT Int. Appl., 37 pp.  
 CODEN: PIXXD2  
 DT Patent  
 LA German  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2001066619	A1	20010913	WO 2001-DE907	20010309
	W: JP, US				
	RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR				
	DE 10011604	A1	20011004	DE 2000-10011604	20000310
	EP 1189974	A1	20020327	EP 2001-931357	20010309
	EP 1189974	B1	20030521		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
	JP 2003525985	T2	20030902	JP 2001-565782	20010309
	US 2002086968	A1	20020704	US 2001-8796	20011113
	US 6824949	B2	20041130		
PRAI	DE 2000-10011604	A	20000310		
GI	WO 2001-DE907	W	20010309		



AB The invention relates to polybenzoxazole precursors which are provided with one of the partial structures I or II (in which the rings may contain F, Me, CF<sub>3</sub>, OMe, or OCF<sub>3</sub> substituents and Z is an aromatic or heterocyclic connecting group). The precursors may be used in conjunction with diazo ketones in photoresist solns. for photoconversion to the cyclized polybenzoxazoles. An example was given for the production of 9,9-bis[4-(4-amino-3-hydroxyphenoxy)phenyl]fluorene-terephthaloyl chloride copolymer and its cyclization in the presence of the diester of bisphenol A with naphthoquinone diazide-5-sulfonic acid to give a high-temperature-stable resist.

IC ICM C08G073-22  
 ICS G03F007-038

CC 35-5 (Chemistry of Synthetic High Polymers)  
 Section cross-reference(s): 24, 37, 74

ST polybenzoxazole precursor prodn photoresist

IT Polyamides, preparation  
 RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (cardo; polybenzoxazole precursor production and use for photoresists)

IT Polyamides, preparation  
 RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (fluorine-containing, cardo; polybenzoxazole precursor production and use for photoresists)

IT Fluoropolymers, preparation  
 RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (polyamide-, cardo; polybenzoxazole precursor production and use for photoresists)

IT Cardo polymers  
 RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (polyamides, fluorine-containing; polybenzoxazole precursor production and use for photoresists)

IT Cardo polymers  
 RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (polyamides; polybenzoxazole precursor production and use for photoresists)

IT Photoresists  
 (polybenzoxazole precursor production and use for photoresists)

IT Polybenzoxazoles  
 RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (polybenzoxazole precursor production and use for photoresists)

IT 359820-18-1P 359820-19-2P 359820-20-5P  
 RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)  
 (monomer intermediate; polybenzoxazole precursor production and use for photoresists)

IT 3236-71-3, 9,9-Bis(4-hydroxyphenyl)fluorene 129464-01-3 359820-21-6  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (monomer starting material; polybenzoxazole precursor production and use for photoresists)

IT 359642-31-2P 359820-23-8P  
 RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)  
 (monomer; polybenzoxazole precursor production and use for photoresists)

IT 38595-90-3  
 RL: MOA (Modifier or additive use); USES (Uses)  
 (photoactive agent; polybenzoxazole precursor production and use for photoresists)

IT 488838-66-0P  
 RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)  
 (polybenzoxazole precursor production and use for photoresists)

IT 32109-45-8P, Poly(2,6-benzoxazolediyl) 359862-18-3P 359862-20-7P  
 RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (polybenzoxazole precursor production and use for photoresists)



IT 359820-18-1P

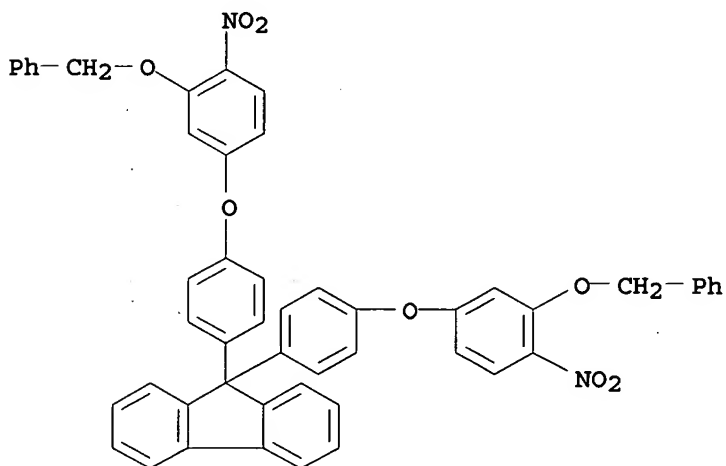
RL: IMF (Industrial manufacture); RCT (Reactant); **PREP**

(**Preparation**); RACT (Reactant or reagent)

(monomer intermediate; polybenzoxazole precursor production and use for photoresists)

RN 359820-18-1 HCAPLUS

CN 9H-Fluorene, 9,9-bis[4-[4-nitro-3-(phenylmethoxy)phenoxy]phenyl] - (9CI)  
(CA INDEX NAME)



RE.CNT 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L21 ANSWER 10 OF 41 HCAPLUS COPYRIGHT 2005 ACS on STN

AN 2000:292576 HCAPLUS

DN 133:238419

TI Synthesis of fluorinated poly(aryl ether)s containing 1,4-naphthalene moieties

AU Mercer, Frank W.; Fone, Matilda M.; McKenzie, Martin T.; Goodwin, Andy A.  
CS Corporate Research and Development, Raychem Corporation, Menlo Park, CA, 94025, USA

SO Fluoropolymers (1999), Volume 1, 111-125. Editor(s): Hougham, Gareth.  
Publisher: Kluwer Academic/Plenum Publishers, New York, N. Y.  
CODEN: 68WRAL

DT Conference

LA English

AB Six novel fluorinated poly(aryl ether)s containing 1,4-naphthalene moieties were synthesized using 2,2-bis[4-(1-naphthoxy)phenyl]hexafluoropropane (I). Oxidative coupling (homopolymn.) of I yielded a polymer with high glass transition temperature, low moisture absorption, and low dielec. constant that could be cast into flexible films. Reaction of I with 4-fluorobenzoyl chloride (Friedel-Crafts acylation) yielded a fluoro-terminated ether-ketone monomer, which was polymerized with 5 different bisphenols to yield poly(ether ketone)s. The following bisphenols were used: 4,4-(hexafluoroisopropylidene)-diphenol, 4,4'-dihydroxybiphenyl, 9,9-bis(4-hydroxyphenyl)fluorene, 4,4'-dihydroxydiphenyl sulfone, and 1,1-bis(4-hydroxyphenyl)-1-phenylethane (bisphenol AP). The poly(ether ketone)s were also cast into flexible, creasable films showing good thermal stability.

CC 35-5 (Chemistry of Synthetic High Polymers)

ST fluorinated arom polyether naphthalene moiety synthesis;

naphthoxyphenylhexafluoropropane monomer synthesis polymn;  
polyketone polyether synthesis bisphenol fluorine contg ether ketone  
monomer

IT Polyethers, preparation  
Polyethers, preparation  
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
(fluorine-containing; preparation and properties of fluorine-containing  
poly(aryl  
ether)s containing naphthalene moieties)

IT Polyketones  
Polyketones  
Polyketones  
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
(polyether-, fluorine-containing; preparation and properties of  
fluorine-containing  
poly(aryl ether)s containing naphthalene moieties)

IT Fluoropolymers, preparation  
Fluoropolymers, preparation  
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
(polyether-; preparation and properties of fluorine-containing poly(aryl  
ether)s  
containing naphthalene moieties)

IT Polysulfones, preparation  
Polysulfones, preparation  
Polysulfones, preparation  
Polysulfones, preparation  
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
(polyether-polyketone-, fluorine-containing; preparation and properties of  
fluorine-containing poly(aryl ether)s containing naphthalene moieties)

IT Fluoropolymers, preparation  
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
(polyether-polyketone-; preparation and properties of fluorine-containing  
poly(aryl ether)s containing naphthalene moieties)

IT Fluoropolymers, preparation  
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
(polyether-polyketone-polysulfone-; preparation and properties of  
fluorine-containing poly(aryl ether)s containing naphthalene moieties)

IT Polyketones  
Polyketones  
Polyketones  
Polyketones  
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
(polyether-polysulfone-, fluorine-containing; preparation and properties of  
fluorine-containing poly(aryl ether)s containing naphthalene moieties)

IT Polyethers, preparation  
Polyethers, preparation  
Polyethers, preparation  
Polyethers, preparation  
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
(polyketone-, fluorine-containing; preparation and properties of  
fluorine-containing  
poly(aryl ether)s containing naphthalene moieties)

IT Polyethers, preparation  
Polyethers, preparation  
Polyethers, preparation  
Polyethers, preparation  
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
(polyketone-polysulfone-, fluorine-containing; preparation and properties of  
fluorine-containing poly(aryl ether)s containing naphthalene moieties)

IT Dielectric constant  
Glass transition temperature

(preparation and properties of fluorine-containing poly(aryl ether)s containing

naphthalene moieties)

IT 136951-69-4P, 2,2-Bis[4-(1-naphthoxy)phenyl]hexafluoropropane  
186751-19-9P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(monomer; preparation and properties of fluorine-containing poly(aryl ether)s containing naphthalene moieties)

IT 136919-56-7P 136951-70-7P 186751-20-2P 186751-21-3P 186751-22-4P  
186751-23-5P 186751-24-6P 186751-25-7P 186751-26-8P 186751-27-9P  
186751-28-0P 186751-29-1P

RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
(preparation and properties of fluorine-containing poly(aryl ether)s

containing

naphthalene moieties)

IT 90-11-9, 1-Bromonaphthalene 403-43-0, 4-Fluorobenzoyl chloride  
1478-61-1

RL: RCT (Reactant); RACT (Reactant or reagent)

(preparation and properties of fluorine-containing poly(aryl ether)s containing

naphthalene moieties)

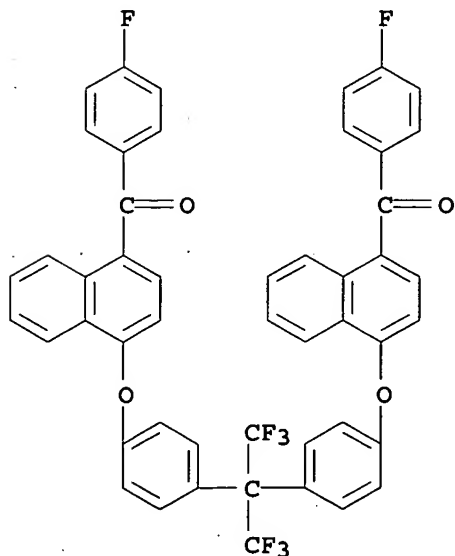
IT 186751-19-9P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(monomer; preparation and properties of fluorine-containing poly(aryl ether)s containing naphthalene moieties)

RN 186751-19-9 HCAPLUS

CN Methanone, [[2,2,2-trifluoro-1-(trifluoromethyl)ethylidene]bis(4,1-phenyleneoxy-4,1-naphthalenediyl)]bis[(4-fluorophenyl)- (9CI) (CA INDEX NAME)



RE.CNT 24 THERE ARE 24 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L21 ANSWER 11 OF 41 HCAPLUS COPYRIGHT 2005 ACS on STN  
AN 2000:248747 HCAPLUS

KATHLEEN FULLER EIC 1700 REMSON 4B28 571/272-2505

- DN 133:17907
- TI New condensation aromatic polymers containing phenoxy, thiophenoxy, and phenylsulfone side groups
- AU Rusanov, A. L.; Tartakovskiy, V. A.; Shevelev, S. A.; Dutov, M. D.; Vatsadse, I. A.; Serushkina, O. V.; Komarova, L. G.; Prigozhina, M. P.; Bulychева, E. G.; Elshina, L. B.
- CS A.N. Nesmeyanov Institute of Organo-Element Compounds, Russian Academy of Sciences, Moscow, 117813, Russia
- SO Polymer (2000), 41(13), 5021-5037  
CODEN: POLMAG; ISSN: 0032-3861
- PB Elsevier Science Ltd.
- DT Journal
- LA English
- AB New condensation **monomers**-primarily diamines containing phenoxy, thiophenoxy and phenylsulfone substituents were obtained from 2,4,6-trinitrotoluene (TNT). Interaction of some dinitro compds. containing strong electron-withdrawing groups in meta-positions with bis-phenols under conditions of aromatic nucleophilic polynitro substitution reactions led to the formation of aromatic oligoethers. Based on aromatic diamines containing phenoxy and thiophenoxy substituents under conditions of traditional polycondensation and cyclo-condensation reactions, aromatic polyamides and polyimides demonstrating improved processability combined with high thermal stability were obtained.
- CC 35-5 (Chemistry of Synthetic High Polymers)
- ST phenoxy thiophenoxy phenylsulfone side group polyimide
- IT Glass transition temperature  
(condensation aromatic polymers containing phenoxy, thiophenoxy, and phenylsulfone side groups)
- IT Polyimides, preparation  
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
(condensation aromatic polymers containing phenoxy, thiophenoxy, and phenylsulfone side groups)
- IT Polyimides, preparation  
Polyimides, preparation  
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
(fluorine-containing; condensation aromatic polymers containing phenoxy, thiophenoxy, and phenylsulfone side groups)
- IT Polyimides, preparation  
Polyimides, preparation  
Polyimides, preparation  
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
(polyether-, fluorine-containing; condensation aromatic polymers containing phenoxy, thiophenoxy, and phenylsulfone side groups)
- IT Fluoropolymers, preparation  
Polyketones  
Polyketones  
Polyketones  
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
(polyether-polyimide-; condensation aromatic polymers containing phenoxy, thiophenoxy, and phenylsulfone side groups)
- IT Polyimides, preparation  
Polyimides, preparation  
Polyimides, preparation  
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
(polyether-polyketone-; condensation aromatic polymers containing phenoxy, thiophenoxy, and phenylsulfone side groups)
- IT Polyethers, preparation  
Polyethers, preparation  
Polyethers, preparation

Polyketones  
Polyketones  
Polyketones  
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
(polyimide-, fluorine-containing; condensation aromatic polymers containing  
phenoxy, thiophenoxy, and phenylsulfone side groups)

IT Fluoropolymers, preparation  
Fluoropolymers, preparation  
Polyketones  
Polyketones  
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
(polyimide-, condensation aromatic polymers containing phenoxy, thiophenoxy,  
and phenylsulfone side groups)

IT Fluoropolymers, preparation  
Polyethers, preparation  
Polyethers, preparation  
Polyethers, preparation  
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
(polyimide-polyketone-, condensation aromatic polymers containing phenoxy,  
thiophenoxy, and phenylsulfone side groups)

IT Polyimides, preparation  
Polyimides, preparation  
Polyimides, preparation  
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
(polyketone-, fluorine-containing; condensation aromatic polymers containing  
phenoxy, thiophenoxy, and phenylsulfone side groups)

IT Polyimides, preparation  
Polyimides, preparation  
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
(polyketone-, condensation aromatic polymers containing phenoxy,  
thiophenoxy,  
and phenylsulfone side groups)

IT	179264-08-5P	179264-09-6P	179264-10-9P	179264-11-0P	179264-12-1P
	179264-13-2P	179264-14-3P	179264-15-4P	179264-16-5P	179264-17-6P
	179264-18-7P	179264-19-8P	179264-20-1P	179264-21-2P	179264-28-9P
	179264-29-0P	179264-30-3P	179264-31-4P	179264-32-5P	179264-33-6P
	179264-34-7P	179264-35-8P	179264-36-9P	179264-37-0P	179264-38-1P
	179264-39-2P	179264-40-5P	179264-41-6P	179264-42-7P	179264-43-8P
	197145-80-5P	201048-22-8P	201048-23-9P	201048-24-0P	201048-25-1P
	201048-26-2P	201048-27-3P	201048-30-8P	201048-31-9P	201048-32-0P
	201048-33-1P	201048-34-2P	245652-66-8P	245652-67-9P	245652-68-0P
	245652-69-1P	245652-70-4P	245652-72-6P	245652-73-7P	245652-74-8P
	245652-75-9P	245652-76-0P	272115-78-3P	272115-79-4P	272115-80-7P
	272115-81-8P	272115-82-9P	272115-83-0P	272115-84-1P	272115-85-2P
	272115-86-3P	272115-87-4P	272115-88-5P	272115-89-6P	272115-90-9P

RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
(condensation aromatic polymers containing phenoxy, thiophenoxy, and  
phenylsulfone side groups)

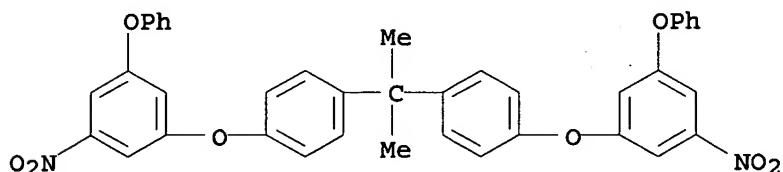
IT 86178-27-0P 148749-61-5P 168839-64-3P 168839-65-4P  
175723-08-7P 179264-04-1P 179264-05-2P 179264-07-4P 179264-26-7P  
201048-19-3P 201048-20-6P 214601-69-1P 245652-64-6P  
245652-65-7P  
RL: PRP (Properties); SPN (Synthetic preparation); PREP  
(Preparation)  
(monomer; condensation aromatic polymers containing phenoxy,  
thiophenoxy, and phenylsulfone side groups)

IT 168839-64-3P 168839-65-4P 201048-19-3P  
201048-20-6P  
RL: PRP (Properties); SPN (Synthetic preparation); PREP  
(Preparation)

(monomer; condensation aromatic polymers containing phenoxy, thiophenoxy, and phenylsulfone side groups)

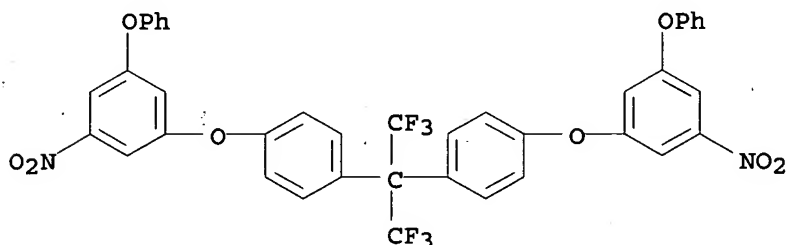
RN 168839-64-3 HCAPLUS

CN Benzene, 1,1'-(1-methylethylidene)bis[4-(3-nitro-5-phenoxyphenoxy)] - (9CI)  
(CA INDEX NAME)



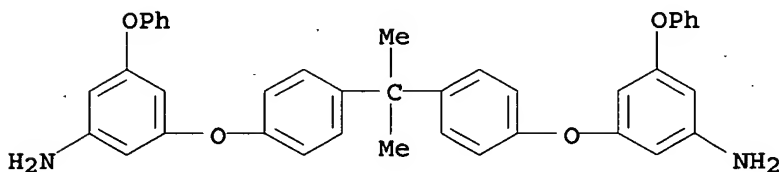
RN 168839-65-4 HCAPLUS

CN Benzene, 1,1'-[2,2,2-trifluoro-1-(trifluoromethyl)ethylidene]bis[4-(3-nitro-5-phenoxyphenoxy)] - (9CI) (CA INDEX NAME)



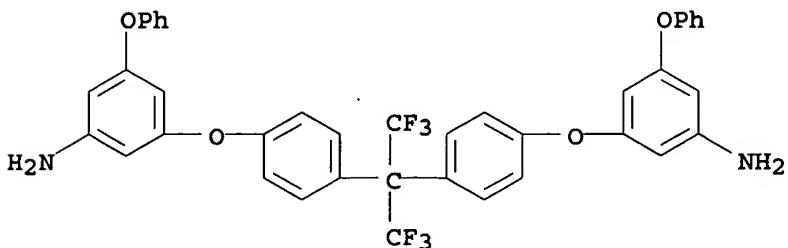
RN 201048-19-3 HCAPLUS

CN Benzenamine, 3,3'-[[1-methylethylidene]bis(4,1-phenyleneoxy)]bis[5-phenoxy- (9CI) (CA INDEX NAME)



RN 201048-20-6 HCAPLUS

CN Benzenamine, 3,3'-[[2,2,2-trifluoro-1-(trifluoromethyl)ethylidene]bis(4,1-phenyleneoxy)]bis[5-phenoxy- (9CI) (CA INDEX NAME)

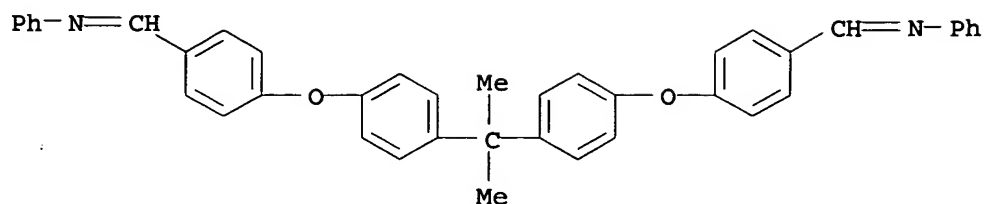


RE.CNT 36 THERE ARE 36 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L21 ANSWER 12 OF 41 HCAPLUS COPYRIGHT 2005 ACS on STN  
AN 1999:363146 HCAPLUS  
DN 131:130348  
TI Poly-Schiff bases - IV. Synthesis and characterization of  
poly(etherazomethine)s  
AU Banerjee, Susanta; Gutch, Pranav K.; Saxena, Chhaya  
CS Defence Research and Development Establishment, Gwalior, 474002, India  
SO Designed Monomers and Polymers (1999), 2(2), 135-142  
CODEN: DMPDF3; ISSN: 1385-772X  
PB VSP BV  
DT Journal  
LA English  
AB Twelve new poly(ether azomethines) with linear structures were prepared by a  
conventional procedure by reacting six different diamines with two  
different bisaldehydes containing ether linkages in the backbone. The  
resulting polymers were confirmed by IR spectra, elemental anal., and  
viscosity measurements. The thermal stability of the polymers was  
evaluated by thermogravimetry and isothermal gravimetric analyses. These  
polymers are reasonably good thermally and thermo-oxidatively stable. A  
semicryst. behavior was noted for these polymers in X-ray powder  
diffraction and DSC measurements.  
CC 35-5 (Chemistry of Synthetic High Polymers)  
ST polyether polyazomethine prepn thermal stability  
IT Polyethers, preparation  
Polyethers, preparation  
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
(polyazomethine-; preparation and characterization of)  
IT Polysulfones, preparation  
Polysulfones, preparation  
Polysulfones, preparation  
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
(polyazomethine-polyether-; preparation and characterization of)  
IT Polyethers, preparation  
Polyethers, preparation  
Polyethers, preparation  
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
(polyazomethine-polysulfone-; preparation and characterization of)  
IT Polyazomethines  
Polyazomethines  
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
(polyether-; preparation and characterization of)  
IT Polyazomethines  
Polyazomethines  
Polyazomethines  
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
(polyether-polysulfone-; preparation and characterization of)  
IT Schiff bases  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(preparation as model compds. for polyazomethine-polyethers)  
IT Polymer degradation  
(thermal; of polyazomethine-polyethers)  
IT Polymer degradation  
(thermooxidative; of polyazomethine-polyethers)  
IT 233766-03-5P 233766-04-6P  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(model compound; preparation and characterization of polyazomethine-  
polyethers)

- IT 80-05-7, Bisphenol A, reactions 459-57-4, p-Fluorobenzaldehyde  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (monomer starting material; preparation and characterization of polyazomethine-polyethers)
- IT 133387-16-3, 4,4'-Biphenol bis(4-formylphenyl) ether  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (monomer; preparation and characterization of polyazomethine-polyethers)
- IT 108934-23-2P, Bisphenol A bis(4-formylphenyl) ether  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
 (monomer; preparation and characterization of polyazomethine-polyethers)
- IT 200401-23-6P, Bisphenol A bis(4-formylphenyl) ether-4,4'-oxydianiline copolymer, SRU 233766-05-7P, Bisphenol A bis(4-formylphenyl) ether-4,4'-oxydianiline copolymer 233766-06-8P, Bisphenol A bis(4-formylphenyl) ether-4,4'-diaminobiphenyl copolymer 233766-07-9P, Bisphenol A bis(4-formylphenyl) ether-4,4'-diaminobiphenyl copolymer, SRU 233766-08-0P, Bisphenol A bis(4-formylphenyl) ether-4,4'-sulfonyldianiline copolymer 233766-09-1P, Bisphenol A bis(4-formylphenyl) ether-4,4'-sulfonyldianiline copolymer, SRU 233766-10-4P, Bisphenol A bis(4-formylphenyl) ether-1,3-propanediamine copolymer 233766-11-5P, Bisphenol A bis(4-formylphenyl) ether-1,3-propanediamine copolymer, SRU 233766-12-6P, Bisphenol A bis(4-formylphenyl) ether-1,6-hexanediamine copolymer 233766-13-7P, Bisphenol A bis(4-formylphenyl) ether-1,6-hexanediamine copolymer, SRU 233766-14-8P, Bis(3-aminopropyl)amine-bisphenol A bis(4-formylphenyl) ether copolymer 233766-15-9P, Bis(3-aminopropyl)amine-bisphenol A bis(4-formylphenyl) ether copolymer, SRU 233766-16-0P, 4,4'-Biphenol bis(4-formylphenyl) ether-4,4'-oxydianiline copolymer 233766-17-1P, 4,4'-Biphenol bis(4-formylphenyl) ether-4,4'-oxydianiline copolymer, SRU 233766-18-2P, 4,4'-Biphenol bis(4-formylphenyl) ether-4,4'-diaminobiphenyl copolymer 233766-19-3P, 4,4'-Biphenol bis(4-formylphenyl) ether-4,4'-diaminobiphenyl copolymer, SRU 233766-20-6P, 4,4'-Biphenol bis(4-formylphenyl) ether-4,4'-sulfonyldianiline copolymer 233766-21-7P, 4,4'-Biphenol bis(4-formylphenyl) ether-4,4'-sulfonyldianiline copolymer, SRU 233766-22-8P, 4,4'-Biphenol bis(4-formylphenyl) ether-1,3-propanediamine copolymer 233766-23-9P, 4,4'-Biphenol bis(4-formylphenyl) ether-1,3-propanediamine copolymer, SRU 233766-24-0P, 4,4'-Biphenol bis(4-formylphenyl) ether-1,6-hexanediamine copolymer 233766-25-1P, 4,4'-Biphenol bis(4-formylphenyl) ether-1,6-hexanediamine copolymer, SRU 233766-26-2P, 4,4'-Biphenol bis(4-formylphenyl) ether-bis(3-aminopropyl)amine copolymer 233766-27-3P, 4,4'-Biphenol bis(4-formylphenyl) ether-bis(3-aminopropyl)amine copolymer, SRU  
 RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
 (preparation and characterization of polyazomethine-polyethers)
- IT 62-53-3, Benzenamine, reactions  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (starting material in preparation of model compound; preparation and characterization of polyazomethine-polyethers)
- IT 233766-03-5P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (model compound; preparation and characterization of polyazomethine-polyethers)
- RN 233766-03-5 HCAPLUS  
 CN Benzenamine, N,N'-[(1-methylethylidene)bis(4,1-phenyleneoxy-4,1-phenylenemethylidene)]bis- (9CI) (CA INDEX NAME)





RE.CNT 12 THERE ARE 12 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L21 ANSWER 13 OF 41 HCAPLUS COPYRIGHT 2005 ACS on STN

AN 1999:344779 HCAPLUS

DN 131:5685

TI Bis[o-amino(thio)phenols] and their preparation

IN Sezi, Recai; Weber, Andreas; Keitmann, Michael

PA Siemens Aktiengesellschaft, Germany

SO Eur. Pat. Appl., 19 pp.

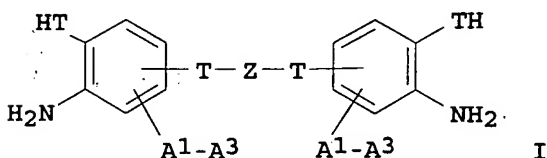
CODEN: EPXXDW

DT Patent

LA German

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 918050	A1	19990526	EP 1998-117331	19980912
	EP 918050	B1	20011212		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
	JP 11189573	A2	19990713	JP 1998-270393	19980924
	US 6156902	A	20001205	US 1998-161549	19980924
PRAI	DE 1997-19742196	A	19970924		
OS	MARPAT 131:5685				
GI					



AB Amino bisphenols and bisthiophenols (I; A1-A3 = H, Me, Et, OMe, OEt; T = O, S; Z = aromatic or heterocyclic connecting group) are obtained by condensation of XZX (X = halogen) with a nitro dihydroxybenzene or -dimercaptobenzene in which the OH or SH ortho to the nitro group is protected. After condensation, the protective group is removed and the nitro group is reduced to the amine. I are suitable for use as precursors or monomers for polymers such as polybenzoxazoles. Thus, benzyl 5-hydroxy-2-nitrophenyl ether was condensed (2:1) with decafluorobiphenyl to give 4,4'-bis[3-(benzyloxy)-4-nitrophenoxy]octafluorobiphenyl, which was debenzylated and reduced over Pd/C at 1 bar H pressure to provide 4,4'-bis(4-amino-3-hydroxyphenoxy)octafluorobiphenyl in .apprx.90% overall yield.

IC ICM C07C217-90

ICS C07D213-69

CC 35-2 (Chemistry of Synthetic High Polymers)

ST bisphenol diamino deriv prodn; bisthiophenol diamino deriv prodn; amino deriv bisphenol bisthiophenol prodn; polybenzoxazole monomer prodn

IT Debenzylation  
Debenzylation  
(catalysts, palladium/carbon; in production of arylenebis(o-aminophenols))

IT Catalysts  
Catalysts  
(debenzylation, palladium/carbon; in production of arylenebis(o-aminophenols))

IT Hydrogenation catalysts  
Hydrogenolysis catalysts  
(palladium/carbon; in production of arylenebis(o-aminophenols))

IT Polybenzoxazoles  
RL: IMF (Industrial manufacture); PREP (Preparation)  
(production of arylenebis(o-aminophenols) as monomers for)

IT Monomers  
RL: IMF (Industrial manufacture); PREP (Preparation)  
(production of arylenebis(o-aminophenols) for polybenzoxazoles)

IT 222612-30-8P, 4,4'-Bis[3-(benzyloxy)-4-nitrophenoxy]octafluorobiphenyl  
225518-45-6P, 4,4'-Bis[3-(benzyloxy)-4-nitrophenoxy]octafluorobenzophenone 225518-46-7P, 2,4-Bis[3-(benzyloxy)-4-nitrophenoxy]-3,5,6-trifluoropyridine 225518-47-8P, 2,4-Bis[3-(benzyloxy)-4-nitrophenoxy]-3,5,6-trifluoro-1-(trifluoromethyl)benzene  
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)  
(intermediate; production of arylenebis(o-aminophenols))

IT 222612-29-5P, 4,4'-Bis(4-amino-3-hydroxyphenoxy)octafluorobiphenyl  
222612-33-1P, 4,4'-Bis(4-amino-3-hydroxyphenoxy)octafluorobenzophenone  
222612-44-4P, 2,4-Bis(4-amino-3-hydroxyphenoxy)-3,5,6-trifluoropyridine  
222612-46-6P, 2,4-Bis(4-amino-3-hydroxyphenoxy)-3,5,6-trifluoro-1-(trifluoromethyl)benzene  
RL: IMF (Industrial manufacture); PREP (Preparation)  
(production of arylenebis(o-aminophenols))

IT 7440-05-3, Palladium, uses  
RL: CAT (Catalyst use); USES (Uses)  
(reduction and debenzoylation catalyst; in production of arylenebis(o-aminophenols))

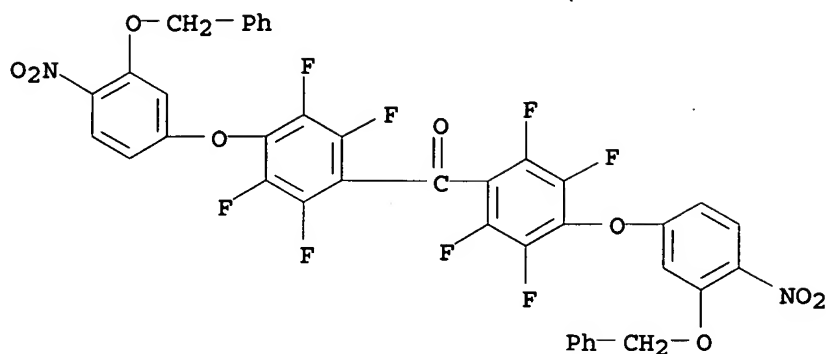
IT 434-64-0, Octafluorotoluene 434-90-2, Decafluorobiphenyl 700-16-3, Pentafluoropyridine 853-39-4 221615-93-6 221615-94-7, Benzyl 5-hydroxy-2-nitrophenyl ether  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(starting material; production of arylenebis(o-aminophenols))

IT 7440-44-0, Carbon, uses  
RL: CAT (Catalyst use); USES (Uses)  
(support for reduction and debenzoylation catalyst; in production of arylenebis(o-aminophenols))

IT 225518-45-6P, 4,4'-Bis[3-(benzyloxy)-4-nitrophenoxy]octafluorobenzophenone  
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)  
(intermediate; production of arylenebis(o-aminophenols))

RN 225518-45-6 HCAPLUS

CN Methanone, bis[2,3,5,6-tetrafluoro-4-[4-nitro-3-(phenylmethoxy)phenoxy]phenyl]- (9CI) (CA INDEX NAME)



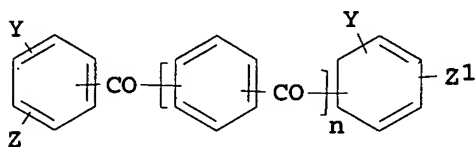
RE.CNT 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L21 ANSWER 14 OF 41 HCAPLUS COPYRIGHT 2005 ACS on STN  
AN 1998:768066 HCAPLUS  
DN 130:81285  
TI Preparation of dihydroxydiaminobenzophenones  
IN Yamashita, Wataru; Yoshimura, Tomomi; Shibuya, Atsushi; Sakata, Yoshihiro;  
Oikawa, Hideaki; Ota, Masahiro  
PA Mitsui Chemicals Inc., Japan  
SO Jpn. Kokai Tokkyo Koho, 12 pp.  
CODEN: JKXXAF

DT Patent  
LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 10316637	A2	19981202	JP 1997-125883	19970515
PRAI	JP 1997-125883		19970515		
OS	MARPAT 130:81285				
GI					



I

AB Title compds. I (Y = NH<sub>2</sub>; Z = OROH; Z<sub>1</sub> = OR<sub>1</sub>OH; n = 0, 1; R, R<sub>1</sub> = C<sub>6</sub>H<sub>4</sub>, C<sub>6</sub>H<sub>4</sub>C<sub>6</sub>H<sub>4</sub>, C<sub>6</sub>H<sub>4</sub>OC<sub>6</sub>H<sub>4</sub>, C<sub>6</sub>H<sub>4</sub>COC<sub>6</sub>H<sub>4</sub>, etc.), useful as **monomers** for polyimides, polyamides to give solubility in aqueous alkali solution and photosensitivity (no data), are prepared by condensation of 1 equiv of dinitrobenzophenones I (Y = NO<sub>2</sub>; Z, Z<sub>1</sub> = halo; n = 0, 1) with 2 equiv of HOR<sub>2</sub>OCH<sub>2</sub>Ph (R<sub>2</sub> = R and/or R<sub>1</sub>) in the presence of basic compds. in aprotic polar solvents and reduction of diphenylbenzophenones I (Y = NO<sub>2</sub>; Z = ORCH<sub>2</sub>Ph; Z<sub>1</sub> = OR<sub>1</sub>CH<sub>2</sub>Ph). 3,3'-Dinitro-4,4'-dichlorobenzophenone was condensed with hydroquinone monobenzyl ether (preparation given) in DMF in the presence of K<sub>2</sub>CO<sub>3</sub> at 80° for 8 h and reduced with Pd/Al<sub>2</sub>O<sub>3</sub> at 50° to give 68% 3,3'-diamino-4,4'-bis(4-hydroxyphenoxy)benzophenone.

IC ICM C07C225-22

ICS B01J023-44; C07C201-12; C07C205-45; C07C221-00; C07C315-04;

C07C317-22; C07C319-20; C07C323-20; C07B061-00

CC 25-16 (Benzene, Its Derivatives, and Condensed Benzenoid Compounds)  
Section cross-reference(s): 35

ST hydroxydiaminobenzophenone prepn monomer polyamide polyimide;  
nitrobenzophenone redn; hydroxy benzyl ether condensation  
halodinitrobenzophenone

IT Polyamides, preparation  
Polyimides, preparation  
RL: PNU (Preparation, unclassified); PREP (Preparation)  
(monomers for; preparation of dihydroxydiaminobenzophenones by  
condensation of hydroxy benzyl ethers with dihalodinitrobenzophenones  
and reduction of dinitrobenzophenones)

IT 217443-77-1P 217444-01-4P 217444-10-5P 217444-21-8P  
218900-80-2P 218900-81-3P  
RL: IMF (Industrial manufacture); SPN (Synthetic preparation); PREP  
(Preparation)  
(preparation of dihydroxydiaminobenzophenones by condensation of hydroxy  
benzyl ethers with dihalodinitrobenzophenones and reduction of  
dinitrobenzophenones)

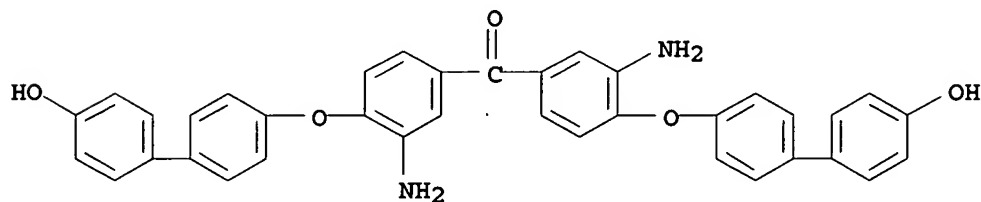
IT 80-05-7, reactions 92-88-6, [1,1'-Biphenyl]-4,4'-diol 100-44-7,  
reactions 123-31-9, 1,4-Benzenediol, reactions 7498-65-9 141789-20-0  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(preparation of dihydroxydiaminobenzophenones by condensation of hydroxy  
benzyl ethers with dihalodinitrobenzophenones and reduction of  
dinitrobenzophenones)

IT 103-16-2P, Hydroquinone monobenzyl ether 42781-88-4P, Bisphenol A  
monobenzyl ether 52189-87-4P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
(Reactant or reagent)  
(preparation of dihydroxydiaminobenzophenones by condensation of hydroxy  
benzyl ethers with dihalodinitrobenzophenones and reduction of  
dinitrobenzophenones)

IT 217444-01-4P 217444-10-5P  
RL: IMF (Industrial manufacture); SPN (Synthetic preparation); PREP  
(Preparation)  
(preparation of dihydroxydiaminobenzophenones by condensation of hydroxy  
benzyl ethers with dihalodinitrobenzophenones and reduction of  
dinitrobenzophenones)

RN 217444-01-4 HCAPLUS

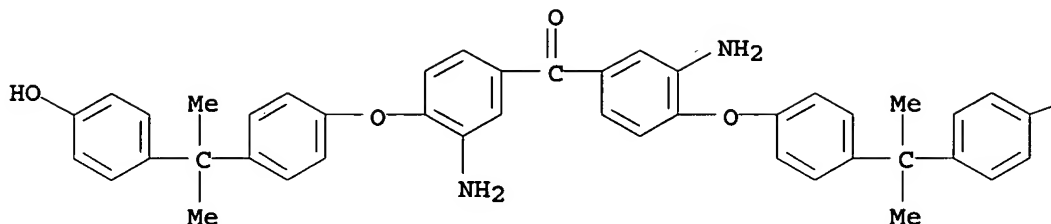
CN Methanone, bis[3-amino-4-[(4'-hydroxy[1,1'-biphenyl]-4-yl)oxy]phenyl]-  
(9CI) (CA INDEX NAME)



RN 217444-10-5 HCAPLUS

CN Methanone, bis[3-amino-4-[4-[1-(4-hydroxyphenyl)-1-methylethyl]phenoxy]phenyl]- (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 1-B

—OH

L21 ANSWER 15 OF 41 HCAPLUS COPYRIGHT 2005 ACS on STN  
 AN 1998:621253 HCAPLUS  
 DN 129:246111  
 TI Reduced-temperature curing of acetylenic polymers  
 IN Hawthorne, David Geoffrey; Hodgkin, Jonathan Howard  
 PA Commonwealth Scientific and Industrial Research Organisation, Australia;  
 The Boeing Co.  
 SO PCT Int. Appl., 37 pp.  
 CODEN: PIXXD2  
 DT Patent  
 LA English  
 FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI WO 9840422	A1	19980917	WO 1998-AU147	19980306
W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, GW, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG				
AU 9862844	A1	19980929	AU 1998-62844	19980306
AU 721200	B2	20000629		
EP 966493	A1	19991229	EP 1998-906747	19980306
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI				
JP 2001514684	T2	20010911	JP 1998-538970	19980306
US 6344523	B1	20020205	US 1999-380505	19991210
PRAI AU 1997-5493	A	19970307		
WO 1998-AU147	W	19980306		

OS MARPAT 129:246111

AB The invention provides a method for promoting the curing reactions of an acetylenic oligomer or polymer, characterized in that the oligomer or polymer is cured in the presence of sulfur or an organic sulfur derivative which

is capable of lowering the temperature of cure of the oligomer or polymer. The

invention also provides a process for producing a polyimide oligomer or polymer containing an aliphatic or aromatic disulfide moiety which is covalently bound to and forms an integral part of the oligomer or polymer and which is capable of lowering the temperature of cure of the oligomer or polymer, characterized in that a suitable amount of a diamino-disulfide or dianhydride-disulfide, or any suitable derivative or precursor thereof, is introduced into the mixture of aromatic diamines, tetracarboxylic dianhydrides, and the phenylethynyl-substituted amine or anhydride normally used for the preparation of the oligoimide.

IC ICM C08F038-00

ICS C08K005-372; C08K005-375; C08K005-40; C08J003-24

CC 37-6 (Plastics Manufacture and Processing)

ST acetylenic polymer curing lower temp; polyimide disulfide group curing lower temp; org sulfur deriv curing acetylenic polymer; sulfur curing catalyst acetylenic polymer

IT Polyimides, preparation

Polyimides, preparation

RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)

(polyether-, acetylene group-containing; reduced-temperature curing of acetylenic

polymers in presence of sulfur or organic sulfur compds.)

IT Polysulfides

Polysulfides

Polysulfides

RL: CAT (Catalyst use); IMF (Industrial manufacture); PREP (Preparation);

USES (Uses)

(polyether-polyimide-; reduced-temperature curing of acetylenic polymers in presence of sulfur or organic sulfur compds.)

IT Polyimides, preparation

Polyimides, preparation

Polyimides, preparation

RL: CAT (Catalyst use); IMF (Industrial manufacture); PREP (Preparation);

USES (Uses)

(polyether-polysulfide-; reduced-temperature curing of acetylenic polymers

in

presence of sulfur or organic sulfur compds.)

IT Polyethers, preparation

Polyethers, preparation

RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT

(Reactant or reagent)

(polyimide-, acetylene group-containing; reduced-temperature curing of

acetylenic

polymers in presence of sulfur or organic sulfur compds.)

IT Polyethers, preparation

Polyethers, preparation

Polyethers, preparation

RL: CAT (Catalyst use); IMF (Industrial manufacture); PREP (Preparation);

USES (Uses)

(polyimide-polysulfide-; reduced-temperature curing of acetylenic polymers

in

presence of sulfur or organic sulfur compds.)

IT Crosslinking catalysts

(reduced-temperature curing of acetylenic polymers in presence of sulfur or organic sulfur compds.)

IT Disulfides

Polysulfides

RL: CAT (Catalyst use); USES (Uses)

(reduced-temperature curing of acetylenic polymers in presence of sulfur or

organic sulfur compds.)

IT 159106-16-8P 213193-19-2P  
 RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)  
 (model compound; reduced-temperature curing of acetylenic polymers in presence of sulfur or organic sulfur compds.)

IT 100-00-5, 4-Chloronitrobenzene 16721-80-5, Sodium hydrosulfide  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (monomer precursor; reduced-temperature curing of acetylenic polymers in presence of sulfur or organic sulfur compds.)

IT 722-27-0P, 4-Aminophenyl disulfide  
 RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)  
 (monomer; reduced-temperature curing of acetylenic polymers in presence of sulfur or organic sulfur compds.)

IT 137-26-8, Tetramethylthiuram disulfide 139-66-2, Diphenyl sulfide  
 150-60-7, Dibenzyl disulfide 882-33-7, Diphenyl disulfide 2757-37-1, Didodecyl disulfide 7704-34-9, Sulfur, uses  
 RL: CAT (Catalyst use); USES (Uses)  
 (reduced-temperature curing of acetylenic polymers in presence of sulfur or organic sulfur compds.)

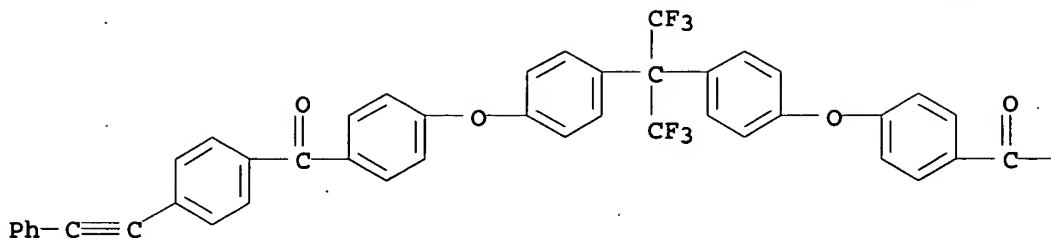
IT 85-44-9DP, 1,3-Isobenzofurandione, reaction products with sulfide-containing polyimides 213193-20-5DP, reaction products with phthalic anhydride 213193-23-8DP, reaction products with phenylethynylphthalic anhydride 213193-26-1DP, reaction products with phenylethynylphthalic anhydride  
 RL: CAT (Catalyst use); IMF (Industrial manufacture); PREP (Preparation); USES (Uses)  
 (reduced-temperature curing of acetylenic polymers in presence of sulfur or organic sulfur compds.)

IT 118496-62-1DP, reaction products with phenylethynylphthalic anhydride 119389-05-8DP, 4-Phenylethynylphthalic anhydride, reaction products with polyimides 213193-21-6DP, reaction products with phenylethynylphthalic anhydride 213193-22-7DP, reaction products with phenylethynylphthalic anhydride 213193-24-9DP, reaction products with phenylethynylphthalic anhydride 213193-25-0DP, reaction products with phenylethynylphthalic anhydride 213193-27-2P  
 RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)  
 (reduced-temperature curing of acetylenic polymers in presence of sulfur or organic sulfur compds.)

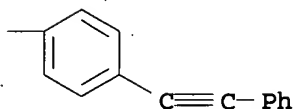
IT 159106-16-8P  
 RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)  
 (model compound; reduced-temperature curing of acetylenic polymers in presence of sulfur or organic sulfur compds.)

RN 159106-16-8 HCAPLUS  
 CN Methanone, [[2,2,2-trifluoro-1-(trifluoromethyl)ethylidene]bis(4,1-phenyleneoxy-4,1-phenylene)]bis[[4-(phenylethynyl)phenyl]- (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 1-B



RE.CNT 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L21 ANSWER 16 OF 41 HCAPLUS COPYRIGHT 2005 ACS on STN

AN 1998:243779 HCAPLUS

DN 128:322029

TI Preparation and properties of processable polyimides having bulky pendent ether groups

AU Tamai, S.; Yamashita, W.; Yamaguchi, A.

CS Omuta Laboratory, Mitsui Toatsu Chemicals, Inc., Omuta, Japan

SO Journal of Polymer Science, Part A: Polymer Chemistry (1998), 36(6), 971-978

CODEN: JPACEC; ISSN: 0887-624X

PB John Wiley & Sons, Inc.

DT Journal

LA English

AB A series of aromatic diamines containing pendent methoxy, phenoxy, and biphenoxy

moieties were synthesized. By the reaction of the diamines with 3,3',4,4'-benzophenonetetracarboxylic dianhydride (BTDA), several kinds of polyimides having bulky pendent ether groups were synthesized. Thermal properties and processability such as melt processability and solubility in organic solvents of the polyimides obtained were investigated by focusing on the chemical structures of their repeating structural units. The thermal stability and melt processability of the polyimides did not strongly depend on the existence of bulky pendent phenoxy and biphenoxy moieties. Their solubility in organic solvents, however, was improved by introducing the bulky pendent ether groups such as methoxy, phenoxy, and biphenoxy moieties into their repeating structural units.

CC 35-5 (Chemistry of Synthetic High Polymers)

ST polyketone polyimide pendent ether group contg

IT Glass transition temperature

Melt viscosity

Solubility



Thermal stability  
(of processable polyimides having bulky pendent ether groups)

IT Polyketones  
Polyketones  
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
(polyimide-; preparation and properties of processable polyimides having bulky pendent ether groups)

IT Polyimides, preparation  
Polyimides, preparation  
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
(polyketone-; preparation and properties of processable polyimides having bulky pendent ether groups)

IT Polymer chains  
(properties and processability of polyimides having bulky pendent ether groups in relation to)

IT 28827-74-9P, 3,3',4,4'-Benzophenonetetracarboxylic dianhydride-3,3'-diaminobenzophenone copolymer 51518-44-6P, 3,3',4,4'-Benzophenonetetracarboxylic dianhydride-3,3'-diaminobenzophenone copolymer, SRU  
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
(comparison polymer; properties of processable polyimides having bulky pendent ether groups in relation to)

IT 100881-20-7P 155085-19-1P, 3,3'-Dinitro-4,4'-diphenoxybenzophenone 206875-38-9P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
(intermediate; in preparation of processable polyimides having bulky pendent ether groups)

IT 71969-51-2P 155085-20-4P, 3,3'-Diamino-4,4'-diphenoxybenzophenone 157632-59-2P, 3,3'-Diamino-4-phenoxybenzophenone 157632-63-8P 157632-66-1P  
RL: RCT (Reactant); SPN (Synthetic preparation); **PREP (Preparation)**; RACT (Reactant or reagent)  
(monomer; for preparation of processable polyimides having bulky pendent ether groups)

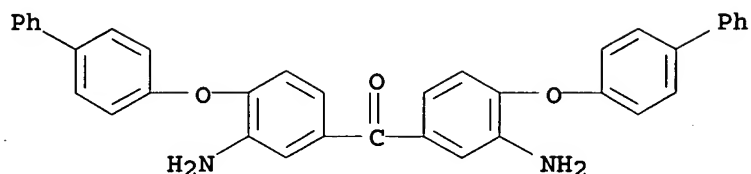
IT 157632-56-9P 157632-58-1P 157632-60-5P 157632-64-9P 157632-67-2P 157632-79-6P 157633-20-0P 206875-39-0P  
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
(preparation and properties of processable polyimides having bulky pendent ether groups)

IT 92-69-3, 4-Hydroxybiphenyl 108-95-2, Phenol, reactions 124-41-4, Sodium methoxide 7498-65-9 37567-44-5  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(reactant; in preparation of processable polyimides having bulky pendent ether groups)

IT 157632-63-8P  
RL: RCT (Reactant); SPN (Synthetic preparation); **PREP (Preparation)**; RACT (Reactant or reagent)  
(monomer; for preparation of processable polyimides having bulky pendent ether groups)

RN 157632-63-8 HCAPLUS

CN Methanone, bis[3-amino-4-([1,1'-biphenyl]-4-yloxy)phenyl]- (9CI) (CA INDEX NAME)



RE.CNT 17 THERE ARE 17 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L21 ANSWER 17 OF 41 HCAPLUS COPYRIGHT 2005 ACS on STN

AN 1998:53354 HCAPLUS

DN 128:102750

TI Synthesis and properties of a novel thermostable polymer: fluorinated polycarbodiimide

AU Mochizuki, Amane; Sakamoto, Michie; Yoshioka, Masahiro; Hotta, Yuji; Fukuoka, Takahiro; Ueda, Mitsuru

CS Core Technology Center, Nitto Denko Co. Ltd., Osaka, 567, Japan

SO High Performance Polymers (1997), 9(4), 385-395

CODEN: HPPOEX; ISSN: 0954-0083

PB Institute of Physics Publishing

DT Journal

LA English

AB A new fluorinated linear polycarbodiimide (F-PCD) was synthesized by solution polycondensation of a new fluorinated diisocyanate monomer, 4'',4'''-(hexafluoroisopropylidene) bis(4-phenoxyphenyl isocyanate) (HPI) in the presence of 3-methyl-1-phenyl-2-phospholene-1-oxide (PMO). HPI was prepared from 4'',4'''-(hexafluoroisopropylidene)bis(4-phenoxyaniline) (HPA) by three steps. The reaction of HPA with Ph chloroformate gave the corresponding carbamate, which upon reaction with trimethylsilyl chloride (TMS-Cl)-triethylamine (TEA), followed by thermal decomposition, provided HPI. The polymer having a number-average mol. weight up to 8400 was obtained in quant.

yield. Thermal properties were investigated and we found that the polymer has a higher glass transition temperature (Tg) up to 230°C, and a lower dielec. constant at 2.98 at 1 MHz than the conventional polycarbodiimides (PCDs). The linear F-PCD was soluble in a wide range of common organic

solvents

such as toluene and dichloromethane.

CC 37-3 (Plastics Manufacture and Processing)

ST thermostable fluorinated polycarbodiimide prepn property;

hexafluoroisopropylidene bisphenoxyphenyl isocyanate prepn polymn

IT Polycarbodiimides

RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)

(-polyether, fluorine-containing; preparation and properties of

thermostable)

IT Polyethers, preparation

Polyethers, preparation

RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)

(fluorine-containing, -polycarbodiimides; preparation and properties of thermostable)

IT Dielectric constant

Glass transition temperature

Mechanical loss

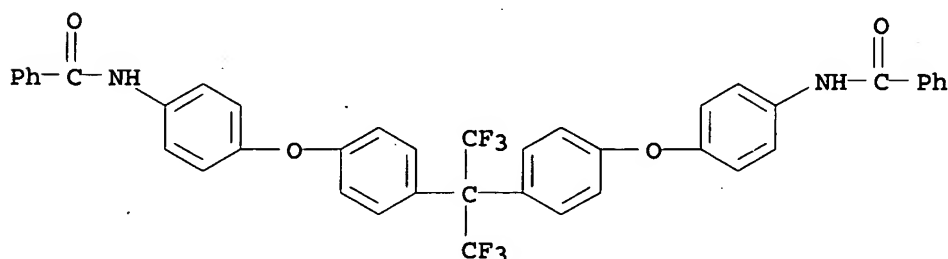
(of thermostable fluorinated polycarbodiimides)

IT Fluoropolymers, preparation

Fluoropolymers, preparation

RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)

- (polyether-, -polycarbodiimides; preparation and properties of thermostable)
- IT 69563-88-8, 4'',4'''-(Hexafluoroisopropylidene)bis(4-phenoxyaniline)  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (in preparation of (hexafluoroisopropylidene) bis(phenoxyphenyl isocyanate) monomer)
- IT 201362-80-3P, 4'',4'''-(Hexafluoroisopropylidene)bis[(4-phenoxy-4-phenyl)phenyl carbamate]  
 RL: RCT (Reactant); SPN (Synthetic preparation); **PREP** (Preparation); RACT (Reactant or reagent)  
 (in preparation of (hexafluoroisopropylidene) bis(phenoxyphenyl isocyanate) monomer)
- IT 189759-70-4P, 4'',4'''-(Hexafluoroisopropylidene) bis(4-phenoxyphenyl isocyanate)  
 RL: RCT (Reactant); SPN (Synthetic preparation); **PREP** (Preparation); RACT (Reactant or reagent)  
 (preparation and polymerization of)
- IT 621-29-4DP, reaction products with fluorinated polycarbodiimide  
 193750-36-6DP, 4'',4'''-(Hexafluoroisopropylidene) bis(4-phenoxyphenyl isocyanate) homopolymer, reaction products with tolyl isocyanate  
 193750-36-6P, 4'',4'''-(Hexafluoroisopropylidene) bis(4-phenoxyphenyl isocyanate) homopolymer 195324-61-9DP, 4'',4'''-(Hexafluoroisopropylidene) bis(4-phenoxyphenyl isocyanate) homopolymer, sru, reaction products with tolyl isocyanate 195324-61-9P, 4'',4'''-(Hexafluoroisopropylidene) bis(4-phenoxyphenyl isocyanate) homopolymer, sru  
 RL: PRP (Properties); SPN (Synthetic preparation); **PREP** (Preparation) (preparation and properties of thermostable)
- IT 201362-80-3P, 4'',4'''-(Hexafluoroisopropylidene)bis[(4-phenoxy-4-phenyl)phenyl carbamate]  
 RL: RCT (Reactant); SPN (Synthetic preparation); **PREP** (Preparation); RACT (Reactant or reagent)  
 (in preparation of (hexafluoroisopropylidene) bis(phenoxyphenyl isocyanate) monomer)
- RN 201362-80-3 HCAPLUS
- CN Benzamide, N,N'-[[2,2,2-trifluoro-1-(trifluoromethyl)ethylidene]bis(4,1-phenyleneoxy-4,1-phenylene)]bis- (9CI) (CA INDEX NAME)



RE.CNT 11 THERE ARE 11 CITED REFERENCES AVAILABLE FOR THIS RECORD  
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

- L21 ANSWER 18 OF 41 HCAPLUS COPYRIGHT 2005 ACS on STN
- AN 1998:6753 HCAPLUS
- DN 128:89167
- TI New phenoxy-substituted aromatic diamines and related polyimides
- AU Rusanov, A. L.; Komarova, L. G.; Prigozhina, M. P.; Sheveleva, T. S.; Es'kov, A. A.; Shevelev, S. A.; Dutov, M. D.; Vatsadze, I. A.
- CS Nesmeyanov Inst. Organoelement Compds., Russ. Acad. Sci., Moscow, 117813, Russia

- SO Vysokomolekulyarnye Soedineniya, Seriya A i Seriya B (1997), 39(10), 1701-1705  
CODEN: VSSBEE; ISSN: 1023-3091
- PB MAIK Nauka  
DT Journal  
LA Russian
- AB New aromatic diamines containing phenoxide substituents - derivs. of 2,4,6-trinitrotoluene - were synthesized. The reaction of these diamines with aromatic tetracarboxylic dianhydrides yielded phenoxy-substituted polyimides. The effect of the structure of the synthesized polymers on their major characteristics was studied. It was found that all polyimides, especially polyimides based on dianhydrides containing "dangling" groups, show large differences between the glass transition and degradation temps., whereas high thermal stability of these polymers remains unchanged. The majority of the obtained polymers are well soluble in organic solvents.
- CC 35-5 (Chemistry of Synthetic High Polymers)
- ST phenoxy substituted arom diamine monomer prepn; polyimide prepn  
phenoxy substituted arom diamine; thermal degrdn polyimide phenoxy substituted diamine
- IT Polyimides, preparation  
Polyimides, preparation  
Polyimides, preparation  
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
(polyether-, fluorine-containing; polyimide preparation from phenoxy-substituted aromatic diamines)
- IT Polyimides, preparation  
Polyimides, preparation  
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
(polyether-; polyimide preparation from phenoxy-substituted aromatic diamines)
- IT Fluoropolymers, preparation  
Polyketones  
Polyketones  
Polyketones  
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
(polyether-polyimide-; polyimide preparation from phenoxy-substituted aromatic diamines)
- IT Polyimides, preparation  
Polyimides, preparation  
Polyimides, preparation  
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
(polyether-polyketone-; polyimide preparation from phenoxy-substituted aromatic diamines)
- IT Melting point  
Viscosity  
(polyimide preparation from phenoxy-substituted aromatic diamines)
- IT Polyethers, preparation  
Polyethers, preparation  
Polyethers, preparation  
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
(polyimide-, fluorine-containing; polyimide preparation from phenoxy-substituted aromatic diamines)
- IT Polyethers, preparation  
Polyethers, preparation  
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)

(polyimide-; polyimide preparation from phenoxy-substituted aromatic diamines)

IT Polyethers, preparation  
Polyethers, preparation  
Polyethers, preparation

RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)

(polyimide-polyketone-; polyimide preparation from phenoxy-substituted aromatic diamines)

IT Polymer degradation

(thermal; polyimide preparation from phenoxy-substituted aromatic diamines)

IT 179264-07-4P 201048-19-3P 201048-20-6P

RL: PRP (Properties); RCT (Reactant); SPN (Synthetic preparation);

**PREP (Preparation)**; RACT (Reactant or reagent)

(monomer; phenoxy-substituted aromatic diamines and related polyimides)

IT 179264-33-6P

RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
(phenoxy-substituted aromatic diamines and related polyimides)

IT 179264-32-5P 179264-34-7P 179264-35-8P 179264-36-9P 179264-37-0P

179264-38-1P 179264-39-2P 179264-40-5P 179264-41-6P 179264-42-7P

179264-43-8P 201048-22-8P 201048-23-9P 201048-24-0P 201048-25-1P

201048-26-2P 201048-27-3P 201048-29-5P 201048-30-8P 201048-31-9P

201048-32-0P 201048-33-1P 201048-34-2P

RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
(polyimide preparation from phenoxy-substituted aromatic diamines)

IT 168839-63-2P 168839-64-3P 168839-65-4P

RL: PRP (Properties); RCT (Reactant); SPN (Synthetic preparation);

**PREP (Preparation)**; RACT (Reactant or reagent)

(reactant in monomer preparation; phenoxy-substituted aromatic diamines and related polyimides)

IT 80-05-7, reactions 123-31-9, Hydroquinone, reactions 1478-61-1,

Bisphenol AF 148749-61-5

RL: RCT (Reactant); RACT (Reactant or reagent)

(reactant in monomer preparation; phenoxy-substituted aromatic diamines and related polyimides)

IT 201048-19-3P 201048-20-6P

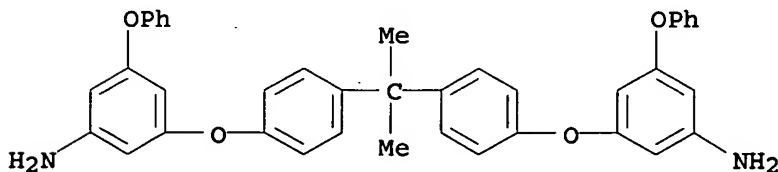
RL: PRP (Properties); RCT (Reactant); SPN (Synthetic preparation);

**PREP (Preparation)**; RACT (Reactant or reagent)

(monomer; phenoxy-substituted aromatic diamines and related polyimides)

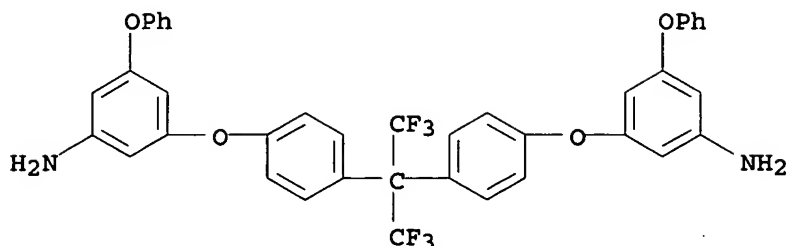
RN 201048-19-3 HCAPLUS

CN Benzenamine, 3,3'-[(1-methylethylidene)bis(4,1-phenyleneoxy)]bis[5-phenoxy- (9CI) (CA INDEX NAME)]



RN 201048-20-6 HCAPLUS

CN Benzenamine, 3,3'-[[2,2,2-trifluoro-1-(trifluoromethyl)ethylidene]bis(4,1-phenyleneoxy)]bis[5-phenoxy- (9CI) (CA INDEX NAME)]

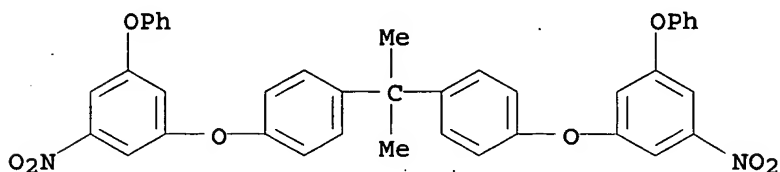


IT 168839-64-3P 168839-65-4P

RL: PRP (Properties); RCT (Reactant); SPN (Synthetic preparation);  
PREP (Preparation); RACT (Reactant or reagent)  
(reactant in monomer preparation; phenoxy-substituted aromatic  
diamines and related polyimides)

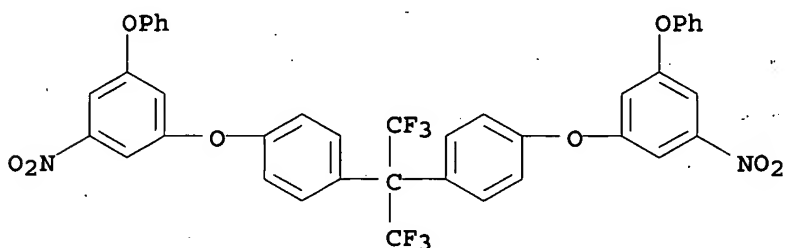
RN 168839-64-3 HCAPLUS

CN Benzene, 1,1'-(1-methylethylidene)bis[4-(3-nitro-5-phenoxyphenoxy)] - (9CI)  
(CA INDEX NAME)



RN 168839-65-4 HCAPLUS

CN Benzene, 1,1'-(2,2,2-trifluoro-1-(trifluoromethyl)ethylidene)bis[4-(3-nitro-5-phenoxyphenoxy)] - (9CI) (CA INDEX NAME)



L21 ANSWER 19 OF 41 HCAPLUS COPYRIGHT 2005 ACS on STN

AN 1997:619443 HCAPLUS

DN 127:307758

TI Oligo(ether sulfones). Part 2. Synthesis of a novel macrocyclic aromatic  
ether sulfone bearing two carboxylic groups and the corresponding  
polyamide via direct condensation of the macrocycle with  
4,4'-diaminodiphenylmethane

AU Rodewald, Barbara; Ritter, Helmut

CS Fachbereich Organic Chemistry Macromolecular Chemistry, Bergische  
Universitat Wuppertal, Wuppertal, D-42097, Germany

SO Macromolecular Rapid Communications (1997), 18(9), 817-825

CODEN: MRCOE3; ISSN: 1022-1336

PB Huethig & Wepf

DT Journal  
 LA English  
 AB A new macrocyclic arylene ether sulfone bearing 2 carboxylic groups (I) was prepared by use of pseudo high dilution techniques. In a first step, 4,4-bis[4-(4-(4-chlorophenylsulfonyl)phenoxy)phenyl]pentanoic acid (II) was prepared from bis(4-chlorophenyl) sulfone and an excess of 4,4-bis(4-hydroxyphenyl)pentanoic acid (III). Then, the purified trimer II was cyclocondensed with III, yielding the bifunctionalized macrocycle I. The existence of the ring-shaped mol. was proved by use of MALDI-TOF, NMR, and IR spectroscopy. The free carboxylic groups of I were used to build up polyamides that contain the macrocycle in the main chain and 4,4'-diaminodiphenylmethane as an aromatic diamine.

CC 35-5 (Chemistry of Synthetic High Polymers)  
 Section cross-reference(s): 28

ST polyether polysulfone macrocycle polyimide prepn  
 IT Configuration  
 Molecular structure  
 (cis, trans; of a macrocyclic aromatic ether sulfone **monomer** bearing two carboxylic groups)

IT Polyamides, preparation  
 RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation) (macrocycle-containing; preparation of a macrocyclic aromatic ether sulfone dicarboxylic acid and corresponding polyamide via direct condensation with diaminodiphenylmethane)

IT 197235-94-2P  
 RL: PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent) (**monomer**, mol. structure; preparation and direct condensation of a macrocyclic aromatic ether sulfone bearing two carboxylic groups)

IT 197235-93-1P  
 RL: PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); **PREP (Preparation)**; RACT (Reactant or reagent) (preparation and direct condensation of a macrocyclic aromatic ether sulfone bearing two carboxylic groups)

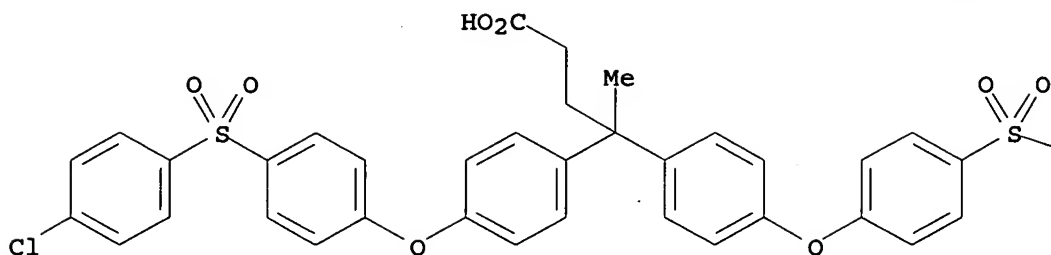
IT 80-07-9 126-00-1, 4,4-Bis(4-hydroxyphenyl)pentanoic acid  
 RL: RCT (Reactant); RACT (Reactant or reagent) (preparation and direct condensation of a macrocyclic aromatic ether sulfone bearing two carboxylic groups)

IT 197235-95-3P 197235-96-4P  
 RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation) (preparation of a macrocyclic aromatic ether sulfone dicarboxylic acid and corresponding polyamide via direct condensation with diaminodiphenylmethane)

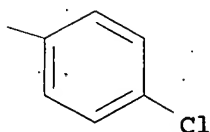
IT 197235-93-1P  
 RL: PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); **PREP (Preparation)**; RACT (Reactant or reagent) (preparation and direct condensation of a macrocyclic aromatic ether sulfone bearing two carboxylic groups)

RN 197235-93-1 HCAPLUS  
 CN Benzenebutanoic acid, 4-[4-[(4-chlorophenyl)sulfonyl]phenoxy]- $\gamma$ -[4-[4-[(4-chlorophenyl)sulfonyl]phenoxy]phenyl]- $\gamma$ -methyl- (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 1-B



L21 ANSWER 20 OF 41 HCAPLUS COPYRIGHT 2005 ACS on STN  
 AN 1997:448701 HCAPLUS  
 DN 127:122281  
 TI Synthesis and characterization of soluble fluorescent poly(aryl ether ketone)s  
 AU Ruan, Ru-Xiang; Chen, Chun-Hai; Zhou, Hong-Wei; Wang, Jun-Zuo; Wu, Zhong-Wen  
 CS Dep. Natl. Defence, State Planning Commission of P.R.C., Beijing, 100084, Peop. Rep. China  
 SO Gaodeng Xuexiao Huaxue Xuebao (1997), 18(4), 655-657  
 CODEN: KTHPDM; ISSN: 0251-0790  
 PB Gaodeng Jiaoyu Chubanshe  
 DT Journal  
 LA Chinese  
 AB The soluble fluorescent poly(aryl ether ketone) polymers were synthesized by nucleophilic substitution reaction of diphenol and aromatic benzene substituted by active fluorine. These polymers have glassy transition temperature of 210 .apprx. 230°. The polymers in solid state and their solns. are all of fluorescence with the color of green and their maximum excitation and emission wavelengths are 420 nm and 487 nm resp. The fluorescent intensity of the polymer solution damp with time delay, but reconstitute when heated to 220° for several minutes.  
 CC 37-3 (Plastics Manufacture and Processing)  
 ST soluble fluorescent polyaryl ether ketones  
 IT Polyketones  
 Polyketones  
 RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
 (polyether-, aromatic; preparation and characterization of soluble fluorescent poly(aryl ether ketone)s)  
 IT Polyethers, preparation  
 Polyethers, preparation  
 RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)



(polyketone-, aromatic; preparation and characterization of soluble fluorescent poly(aryl ether ketone)s)

IT Fluorescence  
Glass transition temperature  
(preparation and characterization of soluble fluorescent poly(aryl ether ketone)s)

IT 192699-93-7P  
RL: PRP (Properties); SPN (Synthetic preparation); **PREP**  
(Preparation)  
(model compound; preparation and characterization of soluble fluorescent poly(aryl ether ketone)s)

IT 81-90-3P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
(monomer; preparation and characterization of soluble fluorescent poly(aryl ether ketone)s)

IT 125976-97-8P 125998-03-0P 192699-94-8P 192699-95-9P 192699-96-0P 192699-97-1P  
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
(preparation and characterization of soluble fluorescent poly(aryl ether ketone)s)

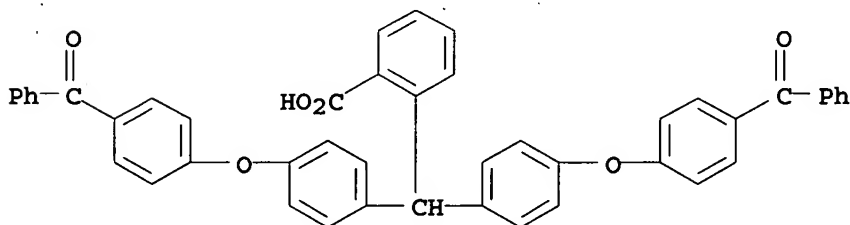
IT 345-83-5, 4-Fluorobenzophenone  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(starting material for model compound; preparation and characterization of soluble fluorescent poly(aryl ether ketone)s)

IT 77-09-8, Phenolphthalein  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(starting material for monomer; preparation and characterization of soluble fluorescent poly(aryl ether ketone)s)

IT 192699-93-7P  
RL: PRP (Properties); SPN (Synthetic preparation); **PREP**  
(Preparation)  
(model compound; preparation and characterization of soluble fluorescent poly(aryl ether ketone)s)

RN 192699-93-7 HCAPLUS

CN Benzoic acid, 2-[bis[4-(4-benzoylphenoxy)phenyl]methyl]- (9CI) (CA INDEX NAME)



L21 ANSWER 21 OF 41 HCAPLUS COPYRIGHT 2005 ACS on STN

AN 1997:86707 HCAPLUS

DN 126:144617

TI Synthesis and characterization of fluorinated poly(aryl ether ketone)s containing 1,4-naphthalene moieties

AU Mercer, Frank W.; Fone, Matilda M.; McKenzie, Martin T.

CS Corporate Research Development, Raychem Corporation, Menlo Park, CA, 94025, USA

SO Journal of Polymer Science, Part A: Polymer Chemistry (1997), 35(3),

521-526

CODEN: JPACEC; ISSN: 0887-624X

PB Wiley

DT Journal

LA English

AB The new monomer 2,2-bis[4-(4-{4-fluorobenzoyl}-1-naphthoxy)phenyl]hexafluoropropane (I) was synthesized in a two-step reaction sequence. 2,2-Bis[4-(1-naphthoxy)phenyl]-hexafluoropropane (II) was prepared using the Illmann ether synthesis reaction of 4,4-(hexafluoroisopropylidene)diphenol with 1-bromonaphthalene. Friedel-Crafts acylation of II with 4-fluorobenzoyl chloride in methylene chloride containing dimethylsulfone selectively afforded I in 82% yield. The polycondensation of I with various bisphenols in DMAc in the presence of an excess of potassium carbonate as a condensation reagent was carried out at 165°C to quant. afford the corresponding fluorinated poly(aryl ether ketone)s containing 1,4-naphthalene moieties. Thermal anal. of the polymers showed them to have Tgs ranging from 194 to 230°C and to be thermally stable in air up with initial weight losses at about 500°C. In addition, these novel polymers exhibited excellent solubility in organic solvents including NMP, DMAc, and chloroform.

CC 35-5 (Chemistry of Synthetic High Polymers)

Section cross-reference(s): 36

ST polyether polyketone polysulfone fluoropolymer aryl synthesis; cardo polyether polyketone fluoropolymer synthesis; dielec const aryl polyether polyketone fluoropolymer; glass temp aryl polyether polyketone fluoropolymer; naphthalene contg aryl polyether polyketone fluoropolymer; humidity dielec const arom polyether polyketone; fluorobenzoyl naphthoxyphenyl hexafluoropropane monomer prepn polymn

IT Dielectric constant

RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation) (fluorine-containing; of fluorinated poly(aryl ether ketone)s containing 1,4-naphthalene moieties)

IT Glass transition temperature

(of fluorinated poly(aryl ether ketone)s containing 1,4-naphthalene moieties)

IT Polyketones

Polyketones

RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation) (polyether-, aromatic, cardo, fluorine-containing; preparation and

characterization

of fluorinated poly(aryl ether ketone)s containing 1,4-naphthalene moieties)

IT Polyketones

Polyketones

RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation) (polyether-, aromatic, fluorine-containing, cardo; preparation and

characterization

of fluorinated poly(aryl ether ketone)s containing 1,4-naphthalene moieties)

IT Polyketones

RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation) (polyether-, cardo, aromatic, fluorine-containing; preparation and

characterization

of fluorinated poly(aryl ether ketone)s containing 1,4-naphthalene moieties)

IT Polyketones

RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation) (polyether-, fluorine-containing, aromatic, cardo; preparation and

characterization

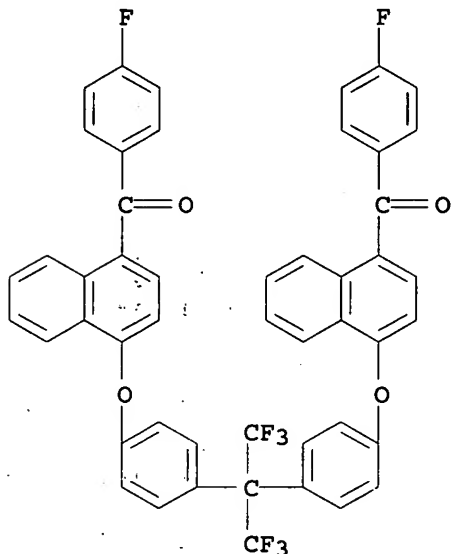
of fluorinated poly(aryl ether ketone)s containing 1,4-naphthalene

- moieties)
- IT Polyketones  
Polyketones  
Polyketones  
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
(polyether-, fluorine-containing; preparation and characterization of  
fluorinated poly(aryl ether ketone)s containing 1,4-naphthalene moieties)
- IT Fluoropolymers, preparation  
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
(polyether-polyketone-, aromatic, cardo; preparation and characterization of  
fluorinated poly(aryl ether ketone)s containing 1,4-naphthalene moieties)
- IT Polysulfones, preparation  
Polysulfones, preparation  
Polysulfones, preparation  
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
(polyether-polyketone-, aromatic, fluorine-containing; preparation and  
characterization of fluorinated poly(aryl ether ketone)s containing  
1,4-naphthalene moieties)
- IT Polysulfones, preparation  
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
(polyether-polyketone-, fluorine-containing, aromatic; preparation and  
characterization of fluorinated poly(aryl ether ketone)s containing  
1,4-naphthalene moieties)
- IT Fluoropolymers, preparation  
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
(polyether-polyketone-; preparation and characterization of fluorinated  
poly(aryl ether ketone)s containing 1,4-naphthalene moieties)
- IT Fluoropolymers, preparation  
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
(polyether-polyketone-polysulfone-, aromatic; preparation and  
characterization  
of fluorinated poly(aryl ether ketone)s containing 1,4-naphthalene  
moieties)
- IT Cardo polymers  
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
(polyether-polyketones, aromatic, fluorine-containing; preparation and  
characterization of fluorinated poly(aryl ether ketone)s containing  
1,4-naphthalene moieties)
- IT Polyketones  
Polyketones  
Polyketones  
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
(polyether-polysulfone-, aromatic, fluorine-containing; preparation and  
characterization of fluorinated poly(aryl ether ketone)s containing  
1,4-naphthalene moieties)
- IT Polyketones  
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
(polyether-polysulfone-, fluorine-containing, aromatic; preparation and  
characterization of fluorinated poly(aryl ether ketone)s containing  
1,4-naphthalene moieties)
- IT Polyethers, preparation  
Polyethers, preparation  
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
(polyketone-, aromatic, cardo, fluorine-containing; preparation and  
characterization of fluorinated poly(aryl ether ketone)s containing  
1,4-naphthalene moieties)
- IT Polyethers, preparation  
Polyethers, preparation  
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
(polyketone-, aromatic, fluorine-containing, cardo; preparation and

- characterization of fluorinated poly(aryl ether ketone)s containing 1,4-naphthalene moieties)
- IT Polyethers, preparation  
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation) (polyketone-, cardo, aromatic, fluorine-containing; preparation and characterization of fluorinated poly(aryl ether ketone)s containing 1,4-naphthalene moieties)
- IT Polyethers, preparation  
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation) (polyketone-, fluorine-containing, aromatic, cardo; preparation and characterization of fluorinated poly(aryl ether ketone)s containing 1,4-naphthalene moieties)
- IT Polyethers, preparation  
Polyethers, preparation  
Polyethers, preparation  
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation) (polyketone-, fluorine-containing; preparation and characterization of fluorinated poly(aryl ether ketone)s containing 1,4-naphthalene moieties)
- IT Polyethers, preparation  
Polyethers, preparation  
Polyethers, preparation  
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation) (polyketone-polysulfone-, aromatic, fluorine-containing; preparation and characterization of fluorinated poly(aryl ether ketone)s containing 1,4-naphthalene moieties)
- IT Polyethers, preparation  
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation) (polyketone-polysulfone-, fluorine-containing, aromatic; preparation and characterization of fluorinated poly(aryl ether ketone)s containing 1,4-naphthalene moieties)
- IT 90-11-9, 1-Bromonaphthalene 403-43-0, 4-Fluorobenzoyl chloride 1478-61-1  
RL: RCT (Reactant); RACT (Reactant or reagent) (monomer synthesis; preparation and characterization of fluorinated poly(aryl ether ketone)s containing 1,4-naphthalene moieties)
- IT 186751-19-9P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent) (monomer; preparation and characterization of fluorinated poly(aryl ether ketone)s containing 1,4-naphthalene moieties)
- IT 584-08-7, Potassium carbonate  
RL: CAT (Catalyst use); USES (Uses) (polymerization catalyst; preparation and characterization of fluorinated poly(aryl ether ketone)s containing 1,4-naphthalene moieties)
- IT 186751-20-2P 186751-21-3P 186751-22-4P 186751-23-5P 186751-24-6P 186751-25-7P 186751-26-8P 186751-27-9P 186751-28-0P 186751-29-1P  
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation) (preparation and characterization of fluorinated poly(aryl ether ketone)s containing 1,4-naphthalene moieties)
- IT 136951-69-4P, 2,2-Bis[4-(1-naphthoxy)phenyl]-hexafluoropropane  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent) (preparation and characterization of fluorinated poly(aryl ether ketone)s containing 1,4-naphthalene moieties)
- IT 186751-19-9P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent) (monomer; preparation and characterization of fluorinated poly(aryl ether ketone)s containing 1,4-naphthalene moieties)

RN 186751-19-9 HCAPLUS

CN Methanone, [[2,2,2-trifluoro-1-(trifluoromethyl)ethylidene]bis(4,1-phenyleneoxy-4,1-naphthalenediyl)]bis[(4-fluorophenyl)- (9CI) (CA INDEX NAME)



RE.CNT 18 THERE ARE 18 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L21 ANSWER 22 OF 41 HCAPLUS COPYRIGHT 2005 ACS on STN

AN 1996:246190 HCAPLUS

DN 124:290447

TI "One-pot" synthesis of poly(amide-imide)s derived from trimellitic acid monoesters and multiring aromatic diamines

AU Avella, Nicola; Maglio, Giovanni; Palumbo, Rosario

CS Dipartimento Chimica, Universita Federico II, Naples, I-80134, Italy

SO Journal of Polymer Science, Part A: Polymer Chemistry (1996), 34(7), 1219-27

CODEN: JPACEC; ISSN: 0887-624X

PB Wiley

DT Journal

LA English

AB Aromatic processable poly(amide-imide)s were prepared according to the Yamazaki and Higashi phosphorylation reaction from flexible aromatic diamines and a mixture of isomeric 1,2,4-benzenetricarboxylic acid monoethyl esters following a novel one-pot procedure. The polymerization was performed in 1-methyl-2-pyrrolidone/LiCl solns. using triphenylphosphite and pyridine as condensing agents to form amide bonds. Cyclization of the intermediate poly(amide-amic Et ester) occurred by eliminating ethanol under the polymerization conditions used, thus leading to the formation of imide rings. The influence of several parameters which regulate the d.p. and the formation of the imide rings, such as reaction temperature, triphenylphosphite/monomer molar ratio, and pyridine concentration was carefully studied. In particular, the catalytic activity of pyridine in the imidization reaction was demonstrated. <sup>13</sup>C-NMR spectroscopy was used to show the absence of constitutional regularity in the prepared PAIs, thus indicating equal reactivity toward polycondensation of the 2 different carboxyl groups of the 1,2,4-benzenetricarboxylic acid monoethyl esters.

- CC 35-5 (Chemistry of Synthetic High Polymers)
- ST polyamide imide trimellitic acid diamine prep; benzenetricarboxylic acid  
one pot polymn polyimide
- IT Polyamic acids  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
(Reactant or reagent)  
(Et esters; one-pot synthesis and microstructure of poly(amide-imide)s  
of trimellitic acid esters and aromatic diamines)
- IT Polymerization  
(direct condensation and imidization; one-pot synthesis and  
microstructure of poly(amide-imide)s of trimellitic acid esters and  
aromatic diamines)
- IT Reactivity ratio in polymerization  
(of tricarboxylic acid groups in condensation; one-pot synthesis and  
microstructure of poly(amide-imide)s of trimellitic acid esters and  
aromatic diamines)
- IT Chains, chemical  
Polymer morphology  
(random distribution; one-pot synthesis and microstructure of  
poly(amide-imide)s of trimellitic acid esters and aromatic diamines)
- IT Polyimides, preparation  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(polyamide-polyether-, aromatic, one-pot synthesis and microstructure of  
poly(amide-imide)s of trimellitic acid esters and aromatic diamines)
- IT Polyimides, preparation  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(polyamide-polyether-, aromatic, fluorine-containing, one-pot synthesis and  
microstructure of poly(amide-imide)s of trimellitic acid esters and  
aromatic diamines)
- IT Fluoropolymers  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(polyamide-polyether-polyimide-, aromatic, one-pot synthesis and  
microstructure of poly(amide-imide)s of trimellitic acid esters and  
aromatic diamines)
- IT Polyethers, preparation  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(polyamide-polyimide-, aromatic, one-pot synthesis and microstructure of  
poly(amide-imide)s of trimellitic acid esters and aromatic diamines)
- IT Polyethers, preparation  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(polyamide-polyimide-, aromatic, fluorine-containing, one-pot synthesis and  
microstructure of poly(amide-imide)s of trimellitic acid esters and  
aromatic diamines)
- IT Polyamides, preparation  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(polyether-polyimide-, aromatic, one-pot synthesis and microstructure of  
poly(amide-imide)s of trimellitic acid esters and aromatic diamines)
- IT Polyamides, preparation  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(polyether-polyimide-, aromatic, fluorine-containing, one-pot synthesis and  
microstructure of poly(amide-imide)s of trimellitic acid esters and  
aromatic diamines)
- IT 101-02-0, Triphenylphosphite  
RL: NUU (Other use, unclassified); USES (Uses)  
(condensing agent; one-pot synthesis and microstructure of  
poly(amide-imide)s of trimellitic acid esters and aromatic diamines)
- IT 83048-51-5P, N,N-Bis(1,4-phenylene)-4,4'-[isopropylidene-bis(1,4-  
phenylene)dioxy]benzamide 93933-29-0P, N,N-Bis(1,4-phenylene)-4,4'-  
[isopropylidene-bis(1,4-phenylene)dioxy]diphthalimide  
RL: SPN (Synthetic preparation); PREP (Preparation)

(imide model compound; one-pot synthesis and microstructure of poly(amide-imide)s of trimellitic acid esters and aromatic diamines)

IT 110-86-1, Pyridine, uses  
 RL: CAT (Catalyst use); USES (Uses)  
 (imidization catalyst; one-pot synthesis and microstructure of poly(amide-imide)s of trimellitic acid esters and aromatic diamines)

IT 7447-41-8, Lithium chloride, uses  
 RL: NUU (Other use, unclassified); USES (Uses)  
 (one-pot synthesis and microstructure of poly(amide-imide)s of trimellitic acid esters and aromatic diamines)

IT 137667-35-7P 176180-55-5P 176180-56-6P 176180-57-7P 176180-58-8P  
 RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
 (one-pot synthesis and microstructure of poly(amide-imide)s of trimellitic acid esters and aromatic diamines)

IT 85-44-9, Phthalic anhydride 98-88-4, Benzoyl chloride 13080-86-9, 4,4'-[Isopropylidene-bis(1,4-phenylene)dioxy]dianiline  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (one-pot synthesis and microstructure of poly(amide-imide)s of trimellitic acid esters and aromatic diamines)

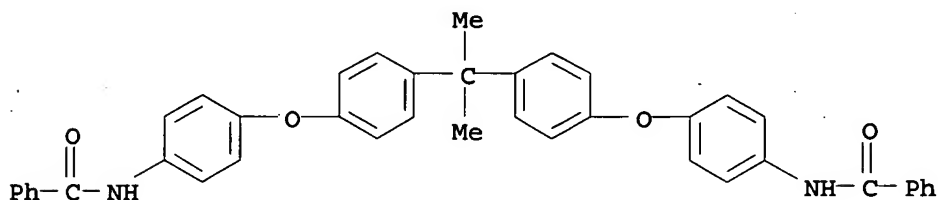
IT 872-50-4, 1-Methyl-2-pyrrolidone, uses  
 RL: NUU (Other use, unclassified); USES (Uses)  
 (polymerization solvent; one-pot synthesis and microstructure of poly(amide-imide)s of trimellitic acid esters and aromatic diamines)

IT 68-12-2, N,N-Dimethylformamide, uses 127-19-5, N,N-Dimethylacetamide  
 RL: NUU (Other use, unclassified); USES (Uses)  
 (solvent; one-pot synthesis and microstructure of poly(amide-imide)s of trimellitic acid esters and aromatic diamines)

IT 83048-51-5P, N,N-Bis(1,4-phenylene)-4,4'-[isopropylidene-bis(1,4-phenylene)dioxy]benzamide  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (imide model compound; one-pot synthesis and microstructure of poly(amide-imide)s of trimellitic acid esters and aromatic diamines)

RN 83048-51-5 HCAPLUS

CN Benzamide, N,N'-[(1-methylethylidene)bis(4,1-phenyleneoxy-4,1-phenylene)]bis- (9CI) (CA INDEX NAME)



L21 ANSWER 23 OF 41 HCAPLUS COPYRIGHT 2005 ACS on STN

AN 1996:69607 HCAPLUS

DN 124:118130

TI A novel radical polymerization of 2,2',3,3',5,5'-hexaphenyl-1,1'-biphenyl-4,4'-dioxy with monomers containing activated methylene groups

AU Barbiero, Gennaro; Hay, Allan S.

CS Dep. Chem., McGill Univ., Montreal, QC, H3A 2K6, Can.

SO Journal of Polymer Science, Part A: Polymer Chemistry (1996), 34(3), 507-11  
 CODEN: JPACEC; ISSN: 0887-624X

PB Wiley

DT Journal

LA English

- AB A novel polymerization of 2,2',3,3',5,5'-hexaphenyl-1,1'-biphenyl-4,4'-diol with a series of activated dimethylene monomers in a two-phase oxidation at 60° in the absence of oxygen was studied. The resulted polymers are soluble in common organic solvents and are quant. cleaved upon heating to low mol. weight species. The cleavage reaction makes them interesting candidates for photoresist materials.
- CC 35-4 (Chemistry of Synthetic High Polymers)
- ST hexaphenyl biphenyl diol oxidn radical polymn; activated methylene diol radical polymn; polyether polyketone prepn hexaphenyl biphenyl diol
- IT Glass temperature and transition  
Polymer degradation  
(radical polymerization of hexaphenylbiphenyldiol with monomers containing activated methylene groups)
- IT Polyethers, preparation  
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
(radical polymerization of hexaphenylbiphenyldiol with monomers containing activated methylene groups)
- IT Polyketones  
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
(polyether-, radical polymerization of hexaphenylbiphenyldiol with monomers containing activated methylene groups)
- IT Polyketones  
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
(polyether-polythioether-, radical polymerization of hexaphenylbiphenyldiol with monomers containing activated methylene groups)
- IT Polyethers, preparation  
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
(polyketone-, radical polymerization of hexaphenylbiphenyldiol with monomers containing activated methylene groups)
- IT Polyethers, preparation  
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
(polyketone-polythioether-, radical polymerization of hexaphenylbiphenyldiol with monomers containing activated methylene groups)
- IT Polymerization  
(radical, radical polymerization of hexaphenylbiphenyldiol with monomers containing activated methylene groups)
- IT Polyethers, preparation  
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
(thio-, polyether-polyketone-, radical polymerization of hexaphenylbiphenyldiol with monomers containing activated methylene groups)
- IT 139599-68-1P 173219-84-6P, 1-Hydroxy-3-(phenylthiomethyl)benzene  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
(intermediate; radical polymerization of hexaphenylbiphenyldiol with monomers containing activated methylene groups)
- IT 160085-44-9P, 4,4'-Bis(cyclohex-2-eneoxy)-2,2'3,3',5,5'-hexaphenyl-1,1'-biphenyl 166256-59-3P, (Phenylene-1,3-dimethyl)-bis(carbazole) 173219-71-1P, Bis{4-[3-(phenylthiomethyl)phenyleneoxy]phenylene}methanone 173219-72-2P, Bis[4-(4-(phenylmethyl)phenyleneoxy)phenylene]methanone 173219-73-3P, 1,8-Bis[4-(phenylmethyl)phenyleneoxy]octane  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
(monomer; radical polymerization of hexaphenylbiphenyldiol with monomers containing activated methylene groups)
- IT 173219-74-4P, Bis[4-(4-(phenylmethyl)phenyleneoxy)phenylene]methanone-2,2'3,3',5,5'-hexaphenyl-1,1'-biphenyl-4,4'-diol copolymer 173219-75-5P, Bis[4-(4-(phenylmethyl)phenyleneoxy)phenylene]methanone-2,2'3,3',5,5'-hexaphenyl-1,1'-biphenyl-4,4'-diol copolymer, sru 173219-76-6P,



1,8-Bis[4-(phenylmethyl)phenyleneoxy]octane-2,2',3,3',5,5'-hexaphenyl-1,1'-biphenyl-4,4'-diol copolymer 173219-77-7P, 1,8-Bis[4-(phenylmethyl)phenyleneoxy]octane-2,2',3,3',5,5'-hexaphenyl-1,1'-biphenyl-4,4'-diol copolymer, sru 173219-78-8P, Bis[4-(3-(phenylthiomethyl)phenyleneoxy)phenylene]methanone-2,2',3,3',5,5'-hexaphenyl-1,1'-biphenyl-4,4'-diol copolymer 173219-79-9P 173219-80-2P, (Phenylene-1,3-dimethyl)-bis(carbazole)-2,2',3,3',5,5'-hexaphenyl-1,1'-biphenyl-4,4'-diol copolymer 173219-81-3P, (Phenylene-1,3-dimethyl)-bis(carbazole)-2,2',3,3',5,5'-hexaphenyl-1,1'-biphenyl-4,4'-diol copolymer, sru 173219-82-4P, 4,4'-Bis(cyclohex-2-eneoxy)-2,2',3,3',5,5'-hexaphenyl-1,1'-biphenyl-2,2',3,3',5,5'-hexaphenyl-1,1'-biphenyl-4,4'-diol copolymer 173219-83-5P, 4,4'-Bis(cyclohex-2-eneoxy)-2,2',3,3',5,5'-hexaphenyl-1,1'-biphenyl-2,2',3,3',5,5'-hexaphenyl-1,1'-biphenyl-4,4'-diol copolymer, sru

RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation) (radical polymerization of hexaphenylbiphenyldiol with **monomers** containing activated methylene groups)

IT 137142-52-0, 2,2',3,3',5,5'-Hexaphenyl-1,1'-biphenyl-4,4'-diol

RL: RCT (Reactant); RACT (Reactant or reagent) (starting material, **monomer**; radical polymerization of hexaphenylbiphenyldiol with **monomers** containing activated methylene groups)

IT 86-74-8, Carbazole 101-53-1, 4-Benzylphenol 108-98-5, Thiophenol, reactions 110-82-7, Cyclohexane, reactions 345-92-6, 4,4'-Difluorobenzophenone 626-16-4 824-98-6, 3-Methoxybenzylchloride 4549-32-0, 1,8-Dibromooctane

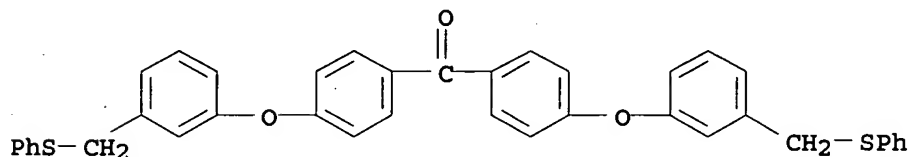
RL: RCT (Reactant); RACT (Reactant or reagent) (starting material; radical polymerization of hexaphenylbiphenyldiol with **monomers** containing activated methylene groups)

IT 173219-71-1P, Bis[4-[3-(phenylthiomethyl)phenyleneoxy]phenylene]methanone 173219-72-2P, Bis[4-(4-(phenylmethyl)phenyleneoxy)phenylene]methanone

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent) (**monomer**; radical polymerization of hexaphenylbiphenyldiol with **monomers** containing activated methylene groups)

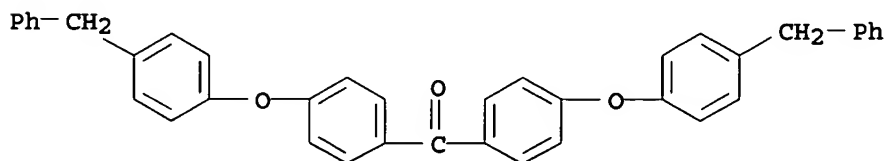
RN 173219-71-1 HCAPLUS

CN Methanone, bis[4-[3-[(phenylthio)methyl]phenoxy]phenyl]- (9CI) (CA INDEX NAME)



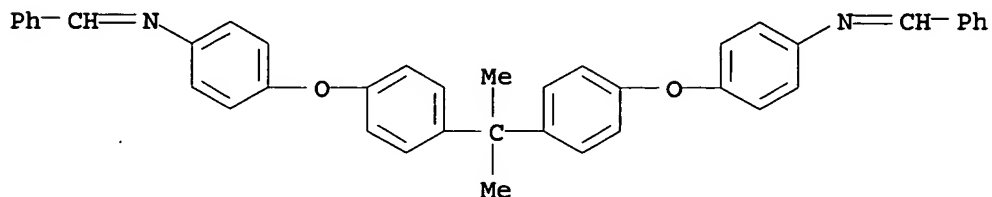
RN 173219-72-2 HCAPLUS

CN Methanone, bis[4-[4-(phenylmethyl)phenoxy]phenyl]- (9CI) (CA INDEX NAME)



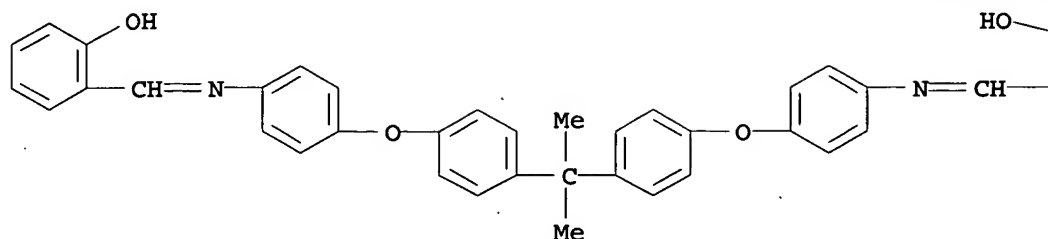
L21 ANSWER 24 OF 41 HCAPLUS COPYRIGHT 2005 ACS on STN  
 AN 1995:997008 HCAPLUS  
 DN 124:88124  
 TI Bisazomethines as monomers for thermally stable polymers  
 IN Semenova, Albina I.; Gefter, Evgenij L.; Semernitskaya, Marina N.;  
 Nikonova, Stella N.; Anisimova, Mariya V.; Shuvalova, Galina I.; Shmakova,  
 Olga E.  
 PA Aktsionernoe Obshchestvo Otkrytogo Tipa "Nauchno-Issledovatel'skij Institut  
 Plasticheskikh Mass im.G.S. Petrova, Russia; Optynym Moskovskim Zavodom  
 Plastmass"  
 SO Russ.  
 From: Izobreteniya 1995, (13), 176-7.  
 CODEN: RUXXE7  
 DT Patent  
 LA Russian  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	RU 2034830	C1	19950510	RU 1992-2533	19921027
PRAI	RU 1992-2533		19921027		
AB	Title only translated.				
IC	ICM C07C251-24				
CC	35-2 (Chemistry of Synthetic High Polymers) Section cross-reference(s): 25				
ST	bisazomethine monomer heat resistant polymer				
IT	Heat-resistant materials (bisazomethine monomers for thermally stable polymers)				
IT	<b>Monomers</b> RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent) (bisazomethine monomers for thermally stable polymers)				
IT	172682-90-5P 172682-91-6P 172682-92-7P RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent) (bisazomethine monomers for thermally stable polymers)				
IT	172682-90-5P 172682-91-6P RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent) (bisazomethine monomers for thermally stable polymers)				
RN	172682-90-5 HCAPLUS				
CN	Benzenamine, 4,4'-[(1-methylethylidene)bis(4,1-phenyleneoxy)]bis[N- (phenylmethylene)- (9CI) (CA INDEX NAME)]				

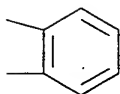


RN 172682-91-6 HCAPLUS  
 CN Phenol, 2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxy)-4,1-  
 phenylenenitrilomethylidene)]bis- (9CI) (CA INDEX NAME)

PAGE 1-A

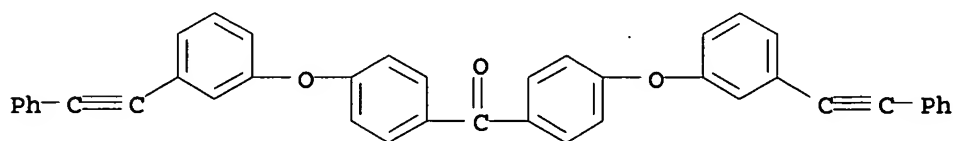


PAGE 1-B



- L21 ANSWER 25 OF 41 HCAPLUS COPYRIGHT 2005 ACS on STN  
 AN 1994:271849 HCAPLUS  
 DN 120:271849  
 TI Synthesis and characterization of 3-phenylethynyl-endcapped matrix resins  
 AU Jayaraman, S.; Meyer, G.; Moy, T. M.; Srinivasan, R.; McGrath, J. E.  
 CS Dep. Chem., Virginia Polytech. Inst. and State Univ., Blacksburg, VA,  
 24061-0344, USA  
 SO Polymer Preprints (American Chemical Society, Division of Polymer  
 Chemistry) (1993), 34(1), 513-14  
 CODEN: ACPPAY; ISSN: 0032-3934  
 DT Journal  
 LA English  
 AB Ph ethynyl-based arylene ether matrix resins were prepared from  
 4,4-dichlorodiphenylsulfone, 4,4-difluorobenzophenone, and  
 bis(p-fluorophenyl)phenyl phosphine oxide using 3-phenylethynyl phenol  
 endcapper under standard poly(arylene ether) conditions. All materials  
 exhibited very low melting temps., an onset of cure at around 350°,  
 and a very wide processing window. Polyimide oligomers endcapped with  
 phenylethynyl aniline were prepared via a one-pot solution imidization  
 involving ester-acid and diamine monomers, yielding highly  
 imidized controlled-mol.-weight Ph acetylene-functionalized polyimides. Upon  
 curing, insol. highly crosslinked films were obtained with high  
 thermooxidative stability.  
 CC 37-3 (Plastics Manufacture and Processing)  
 ST polyacetylene prepn characterization; phenylethynyl endcapper  
 polyacetylene prepn; fluoropolymer polyimide phenylethynyl aniline  
 terminated; polyether fluoropolymer polyimide end capped; aniline  
 phenylethynyl endcapper polyimide prepn  
 IT Glass temperature and transition  
 (of fluoro-containing polyimides or polyether-polyimides)  
 IT Polyacetylenes, preparation  
 RL: PEP (Physical, engineering or chemical process); PROC (Process)  
 (preparation and characterization of)  
 IT Polyimides, preparation  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (fluorine-containing, acetylene-terminated, preparation and  
 characterization of)  
 IT Polyimides, preparation  
 RL: SPN (Synthetic preparation); PREP (Preparation)

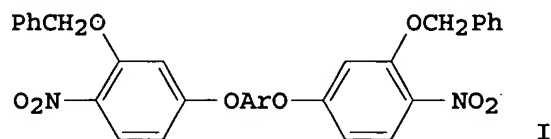
- (polyether-, fluorine-containing, acetylene-terminated, preparation and characterization of)
- IT Fluoropolymers  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(polyether-polyimide-, acetylene-terminated, preparation and characterization of)
- IT Fluoropolymers  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(polyimide-, acetylene-terminated, preparation and characterization of)
- IT Polyethers, preparation  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(polyimide-, fluorine-containing, acetylene-terminated, preparation and characterization of)
- IT 51624-44-3, 3-Phenylethynyl aniline  
RL: USES (Uses)  
(endcapper, for arylene ether resins, preparation and characterization of)
- IT 96250-69-0P 154951-31-2P 154951-32-3P  
RL: SPN (Synthetic preparation); **PREP (Preparation)**  
(preparation and characterization and curing of)
- IT 32240-73-6DP, phenylethynyl aniline-end-capped 40921-63-9DP,  
phenylethynyl aniline-end-capped 96250-70-3P 145849-93-0P  
154951-33-4P 154951-34-5P 154951-35-6P  
RL: PEP (Physical, engineering or chemical process); SPN (Synthetic preparation); PREP (Preparation); PROC (Process)  
(preparation and characterization of)
- IT 108-86-1, Bromobenzene, reactions  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(reaction of, with aminophenylacetylene)
- IT 54060-30-9, 3-Aminophenylacetylene  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(reaction of, with bromobenzene)
- IT 111731-38-5  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(reaction of, with dihalomonomers)
- IT 80-07-9 345-92-6 54300-32-2  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(reaction of, with phenylethynylphenol)
- IT 154951-31-2P  
RL: SPN (Synthetic preparation); **PREP (Preparation)**  
(preparation and characterization and curing of)
- RN 154951-31-2 HCAPLUS
- CN Methanone, bis[4-[3-(phenylethynyl)phenoxy]phenyl]- (9CI) (CA INDEX NAME)



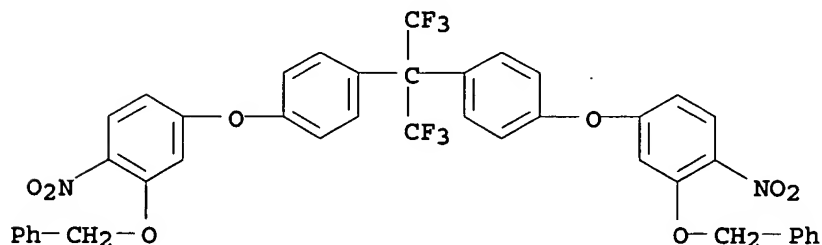
- L21 ANSWER 26 OF 41 HCAPLUS COPYRIGHT 2005 ACS on STN
- AN 1994:164950 HCAPLUS
- DN 120:164950
- TI The synthesis of 6F bis(o-aminophenol) monomers by a nucleophilic substitution reaction
- AU Winzeler, Jacqueline T.; Patel, Bharat P.; Feld, William A.
- CS Dep. Chem., Wright State Univ., Dayton, OH, 45435, USA
- SO Polymer Preprints (American Chemical Society, Division of Polymer

Chemistry) (1993), 34(1), 425-6  
CODEN: ACPPAY; ISSN: 0032-3934.

DT Journal  
LA English  
GI

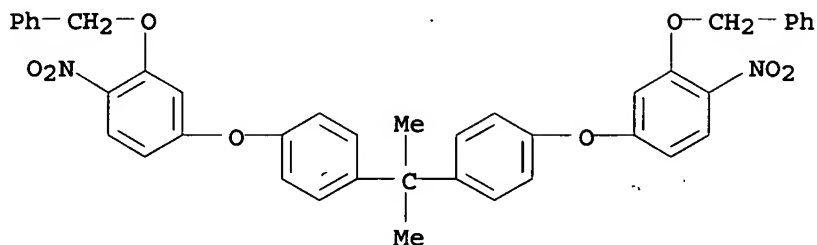


- AB The preparation of I [Ar = m-C<sub>6</sub>H<sub>4</sub>, p-C<sub>6</sub>H<sub>4</sub>, p-C<sub>6</sub>H<sub>4</sub>C(CF<sub>3</sub>)<sub>2</sub>-p-C<sub>6</sub>H<sub>4</sub> (II), or p-C<sub>6</sub>H<sub>4</sub>CMe<sub>2</sub>-p-C<sub>6</sub>H<sub>4</sub>] by reacting 2-(benzyloxy)-4-fluoro-2-nitrobenzene with the corresponding diphenol is reported. Hydrogenation of II gives the 6F bis(o-aminophenol) as a **monomer** for the preparation of F-containing polybenzoxazoles.
- CC 35-2 (Chemistry of Synthetic High Polymers)  
Section cross-reference(s): 25
- ST fluoroisopropylidenebisaminophenol **monomer** prepn; bisaminophenol  
fluorine contg **monomer** prepn
- IT 153614-67-6P  
RL: RCT (Reactant); SPN (Synthetic preparation); **PREP**  
(**Preparation**); RACT (Reactant or reagent)  
(preparation and hydrogenation of)
- IT 153614-65-4P, m-Bis[3-(benzyloxy)-4-nitrophenoxy]benzene 153614-66-5P,  
p-Bis[3-(benzyloxy)-4-nitrophenoxy]benzene 153614-68-7P  
RL: SPN (Synthetic preparation); **PREP** (**Preparation**)  
(preparation of)
- IT 153614-69-8P  
RL: SPN (Synthetic preparation); **PREP** (**Preparation**)  
(preparation of, as **monomer** for fluorine-containing polybenzoxazoles)
- IT 153614-67-6P  
RL: RCT (Reactant); SPN (Synthetic preparation); **PREP**  
(**Preparation**); RACT (Reactant or reagent)  
(preparation and hydrogenation of)
- RN 153614-67-6 HCAPLUS
- CN Benzene, 1,1'-(2,2,2-trifluoro-1-(trifluoromethyl)ethylidene)bis[4-[4-nitro-3-(phenylmethoxy)phenoxy]- (9CI) (CA INDEX NAME)



- IT 153614-68-7P  
RL: SPN (Synthetic preparation); **PREP** (**Preparation**)  
(preparation of)
- RN 153614-68-7 HCAPLUS
- CN Benzene, 1,1'-(1-methylethylidene)bis[4-[4-nitro-3-(phenylmethoxy)phenoxy]-

(9CI) (CA INDEX NAME)



L21 ANSWER 27 OF 41 HCAPLUS COPYRIGHT 2005 ACS on STN

AN 1993:22788 HCAPLUS

DN 118:22788

TI Preparation of bisimide from diamine, carbon monoxide, and haloaryl-substituted imide of Nadic acid

IN Turner, S. Richard; Perry, Robert J.; Blevins, Richard W.

PA Eastman Kodak Co., USA

SO U.S., 6 pp.

CODEN: USXXAM

DT Patent

LA English

FAN.CNT 1

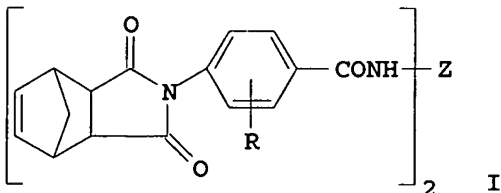
	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 5149824	A	19920922	US 1991-724269	19910701
	CA 2071749	AA	19930102	CA 1992-2071749	19920622
	JP 08027111	A2	19960130	JP 1992-170480	19920629
	EP 521466	A1	19930107	EP 1992-111084	19920630

R: DE, FR, GB

PRAI US 1991-724269 A 19910701

OS MARPAT 118:22788

GI



AB Comps. I (R = H; alkyl, alkoxy, etc.; Z = divalent aromatic group), useful in the preparation of addition polyimides with good heat resistance, are prepared by

the reaction of an N-(haloaryl) derivative of the imide of Nadic acid with CO and a primary diamine in the presence of a base and a Pd catalyst.

Reacting the N-(4-iodophenyl) derivative of the imide of Nadic acid with CO and 4,4'-oxydianiline in AcNMe<sub>2</sub> in the presence of Ph<sub>3</sub>P, bis(triphenylphosphine)palladium chloride and a base gave I (R = H; Z = p-C<sub>6</sub>H<sub>4</sub>O-p-C<sub>6</sub>H<sub>4</sub>).

IC ICM C07D209-56

NCL 548435000

CC 35-2 (Chemistry of Synthetic High Polymers)  
 Section cross-reference(s): 25

ST Nadic acid diimide prepn **monomer**; imide Nadic acid prepn  
**monomer**; iodophenyl Nadic imide reaction **monomer**;  
 polyimide addn Nadic acid imide; bicycloheptenedicarboxylic diimide prepn  
**monomer**; amine Nadic imide deriv **monomer**; carbon  
 monoxide Nadic imide **monomer**; amide Nadic imide deriv  
**monomer**; crosslinker Nadic imide deriv prepn

IT Crosslinking agents  
**Monomers**  
 RL: PREP (Preparation)  
 (bisimides of Nadic acid, preparation of)

IT Amidation  
 (in manufacture of bisimides of Nadic acid)

IT Amidation catalysts  
 Carbonylation catalysts  
 (palladium compds., in manufacture of bisimides of Nadic acid)

IT Heat-resistant materials  
 (polyimides, preparation of, from bisimides of Nadic acid)

IT Polyimides, preparation  
 RL: PREP (Preparation)  
 (preparation of, bisimides of Nadic acid for)

IT Imides  
 RL: PREP (Preparation)  
 (di-, preparation of, from Nadic acid, as **monomers**)

IT 603-35-0, Triphenylphosphine, uses 13965-03-2  
 RL: CAT (Catalyst use); USES (Uses)  
 (catalysts, for reaction of carbon monoxide with (iodophenyl)nadimide  
 and diamine)

IT 6674-22-2, 1,8-Diazabicyclo[5.4.0]undec-7-ene  
 RL: USES (Uses)  
 (in reaction of carbon monoxide with diamine and (halophenyl)nadimide)

IT 145176-66-5P 145176-67-6P 145176-68-7P  
 RL: PREP (Preparation)  
 (preparation of, as **monomer** for addition polyimides)

IT 145176-65-4  
 RL: USES (Uses)  
 (reaction of with oxydianiline and carbon monoxide)

IT 2657-87-6, 3,4'-Oxydianiline  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (reaction of, with (bromophenyl)nadimide and carbon monoxide)

IT 101-80-4  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (reaction of, with (halophenyl)nadimide and carbon monoxide)

IT 630-08-0, Carbon monoxide, reactions  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (reaction of, with (halophenyl)nadimide and diamine)

IT 13080-86-9  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (reaction of, with carbon monoxide and (iodophenyl)nadimide)

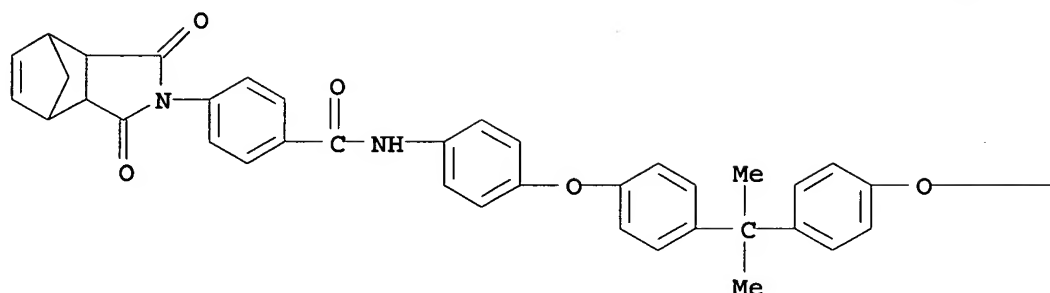
IT 43069-71-2  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (reaction of, with carbon monoxide and oxydianiline)

IT 145176-67-6P  
 RL: PREP (Preparation)  
 (preparation of, as **monomer** for addition polyimides)

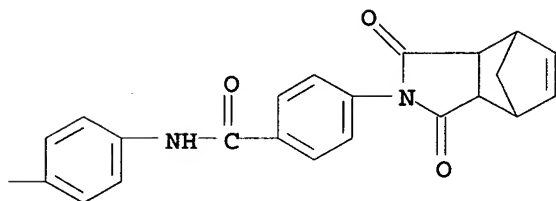
RN 145176-67-6 HCAPLUS

CN Benzamide, N,N'-[(1-methylethylidene)bis(4,1-phenyleneoxy-4,1-  
 phenylene)]bis[4-(1,3,3a,4,7,7a-hexahydro-1,3-dioxo-4,7-methano-2H-  
 isoindol-2-yl)]- (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 1-B



L21 ANSWER 28 OF 41 HCAPLUS COPYRIGHT 2005 ACS on STN  
 AN 1992:427488 HCAPLUS  
 DN 117:27488  
 TI Fluorinated quinoline polymers and the corresponding fluorinated  
 monomers  
 IN Hendricks, Neil Hyer  
 PA Maxdem, Inc., USA  
 SO PCT Int. Appl., 56 pp.  
 CODEN: PIXXD2  
 DT Patent  
 LA English  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9203488	A1	19920305	WO 1991-US5741	19910813
	W: CA, JP, KR				
	RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LU, NL, SE				
	CA 2089092	AA	19920217	CA 1991-2089092	19910813
	CA 2089092	C	20030610		
	EP 543950	A1	19930602	EP 1991-918525	19910813
	EP 543950	B1	19980624		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE				
	US 5247050	A	19930921	US 1991-744539	19910813
	JP 06500591	T2	19940120	JP 1991-517795	19910813
	JP 3135123	B2	20010213		
	EP 752440	A1	19970108	EP 1996-114313	19910813
	EP 752440	B1	20010627		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE				
	AT 167687	E	19980715	AT 1991-918525	19910813
	AT 202582	E	20010715	AT 1996-114313	19910813
	US 5344981	A	19940906	US 1993-98197	19930728



PRAI US 1990-568059 A 19900816  
 EP 1991-918525 A3 19910813  
 US 1991-744539 A3 19910813  
 WO 1991-US5741 W 19910813

AB The title polymers comprise repeating units containing quinoline groups and hexafluoroisopropylidene or 1-aryl-2,2,2-trifluoroethylidene groups. The polymers are useful as dielec. layers in multichip modules in microelectronics, films, fibers, etc. Polymerization of 2,2'-bis[4-(4-acetylphenoxy)phenyl]hexafluoropropane and 3,3'-dibenzoyl-4,4'-diaminobiphenyl in m-cresol/di-Ph phosphate mixture at 90° for 72 h gave a polyquinoline with dielec. constant 2.57.

IC ICM C08G008-02  
 ICS C08G012-00; C08G014-00; C08G063-00; C08G073-06; C08G075-00

CC 35-5 (Chemistry of Synthetic High Polymers)  
 Section cross-reference(s): 38, 40, 76

ST quinoline polymer fluorine contg; polyquinoline fluoro dielec microelectronic module

IT Radomes  
 (fluorine-containing polyquinoline dielecs. for)

IT Electric capacitors  
 (fluorine-containing polyquinoline for)

IT Electric insulators and Dielectrics  
 (fluorine-containing polyquinolines)

IT Electronic device packaging  
 (fluorine-containing polyquinolines for)

IT Fluoropolymers  
 RL: PREP (Preparation)  
 (polyether-polyquinoline-, preparation of, dielec.)

IT Fluoropolymers  
 RL: PREP (Preparation)  
 (polyquinoline-, preparation of, dielec.)

IT Polyethers, preparation  
 RL: PREP (Preparation)  
 (polyquinoline-, fluorine-containing, preparation of, dielec.)

IT Synthetic fibers, polymeric  
 RL: PREP (Preparation)  
 (polyquinolines, fluorine-containing, preparation of, dielec.)

IT 1102-92-7  
 RL: PROC (Process)  
 (conversion of, to bis(acetylphenyl)hexafluoropropane)

IT 1882-01-5  
 RL: PROC (Process)  
 (conversion of, to bis[(acetylphenoxy)phenyl]phenyltrifluoroethane)

IT 142059-49-2P 142059-50-5P 142059-51-6P 142059-52-7P  
 142059-53-8P 142059-54-9P 142059-55-0P  
 RL: RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)  
 (preparation and polymerization of)

IT 142084-73-9P 142084-74-0P 142084-75-1P 142084-76-2P 142084-77-3P  
 142110-35-8P 142252-00-4P 142252-01-5P 142252-02-6P 142277-14-3P  
 142277-15-4P  
 RL: PREP (Preparation)  
 (preparation of, dielec.)

IT 403-42-9  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (reaction of, with (hexafluoroisopropylidene)diphenol)

IT 1478-61-1, 4,4'-(Hexafluoroisopropylidene)diphenol  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (reaction of, with fluoroacetophenone)

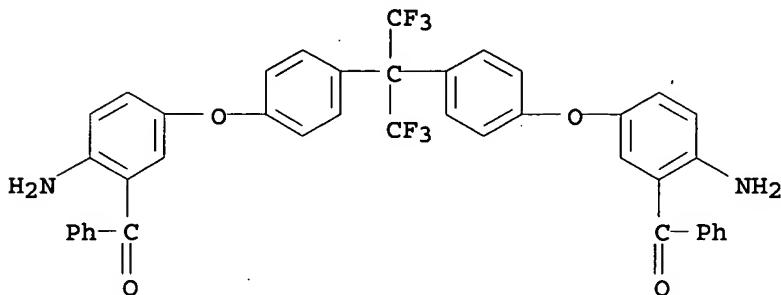
IT 142059-50-5P

RL: RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)

(preparation and polymerization of)

RN 142059-50-5 HCAPLUS

CN Methanone, [[2,2,2-trifluoro-1-(trifluoromethyl)ethylidene]bis[4,1-phenyleneoxy(6-amino-3,1-phenylene)]]bis[phenyl- (9CI) (CA INDEX NAME)



L21 ANSWER 29 OF 41 HCAPLUS COPYRIGHT 2005 ACS on STN

AN 1992:42258 HCAPLUS

DN 116:42258

TI Film-forming, heat-resistant polyazomethine-polysters with regulated monomer sequences

IN Wada, Keiichiro; Cassidy; Patrick E.; Hager, William S.

PA Nippon Steel Chemical Co., Ltd., Japan

SO U.S., 9 pp.

CODEN: USXXAM

DT Patent

LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 5066765	A	19911119	US 1990-507536	19900411
	JP 04227627	A2	19920817	JP 1991-101814	19910408
PRAI	US 1990-507536	A	19900411		

AB Polymers useful as insulators for LSI, solder resists, oriented films for liquid-crystal displays, etc. have the repeating units  
 OZ1C(R):NZ2N:(R)CZ1OC0Z2CO (Z1 = C6H4; Z2 = arylene or bisphenol residue; R = H, alkyl, alkoxy, aryl). Thus, 4,4'-oxydianiline and 4-HOC6H4CHO gave a Schiff base bisphenol, polymerization of which with 4,4'-(hexafluoroisopropylidene)dibenzoyl chloride in the presence of NaOH and Bu4N+ Br- gave a polyester forming heat-resistant films when cast from CHCl3.

IC ICM C08G063-00

NCL 528185000

CC 35-5 (Chemistry of Synthetic High Polymers)

Section cross-reference(s): 25

ST Schiff base bisphenol polyester; hydroxybenzaldehyde reaction oxydianiline; heat resistance polyazomethine polyester; hexafluoroisopropylidenedibenzoate polyester

IT Polyethers, preparation

RL: PREP (Preparation)

(polyazomethine-polyester-, fluorine-containing, aromatic, heat-resistant

and

film-forming, preparation of)

IT Fluoropolymers

RL: PREP (Preparation)  
 (polyazomethine-polyester-polyether-, aromatic, heat-resistant and  
 film-forming, preparation of)

IT Polyesters, preparation  
 RL: PREP (Preparation)  
 (polyazomethine-polyether-, fluorine-containing, aromatic, heat-resistant  
 and  
 film-forming, preparation of)

IT Polyazomethines  
 RL: PREP (Preparation)  
 (polyester-polyether-, fluorine-containing, aromatic, heat-resistant and  
 film-forming, preparation of)

IT Schiff bases  
 RL: PREP (Preparation)  
 (polymers, heat-resistant and film-forming, preparation of)

IT 129197-33-7P 129197-35-9P 129197-36-0P 129197-37-1P 129219-47-2P  
 129219-48-3P 129219-49-4P 129219-50-7P 138692-91-8P 138692-92-9P  
 138735-58-7P 138735-60-1P  
 RL: PREP (Preparation)  
 (heat-resistant and film-forming, preparation of)

IT 82499-47-6P 129197-34-8P 138735-57-6P 138735-59-8P  
 RL: PREP (Preparation)  
 (preparation of)

IT 100-83-4, 3-Hydroxybenzaldehyde 123-08-0, 4-Hydroxybenzaldehyde  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (reaction of, with aromatic diamines)

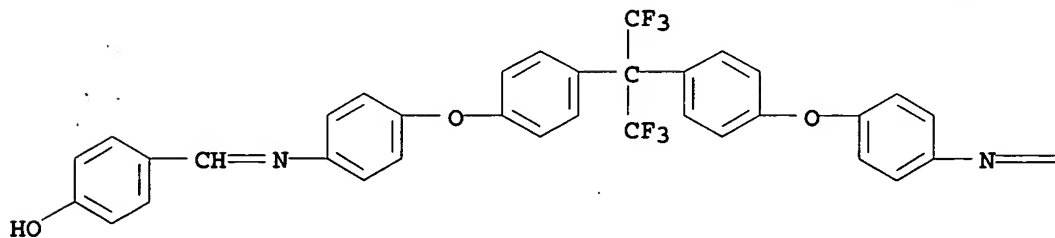
IT 101-80-4, 4,4'-Diaminodiphenyl ether 13080-86-9, 2,2-Bis[4-(4-  
 aminophenoxy)phenyl]propane 69563-88-8, 2,2-Bis[4-(4-  
 aminophenoxy)phenyl]hexafluoropropane  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (reaction of, with hydroxybenzaldehyde)

IT 129197-34-8P 138735-57-6P  
 RL: PREP (Preparation)  
 (preparation of)

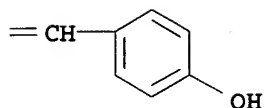
RN 129197-34-8 HCAPLUS

CN Phenol, 4,4'-[[2,2,2-trifluoro-1-(trifluoromethyl)ethylidene]bis(4,1-  
 phenyleneoxy-4,1-phenylenenitrilomethylidyne)]bis- (9CI) (CA INDEX NAME)

PAGE 1-A

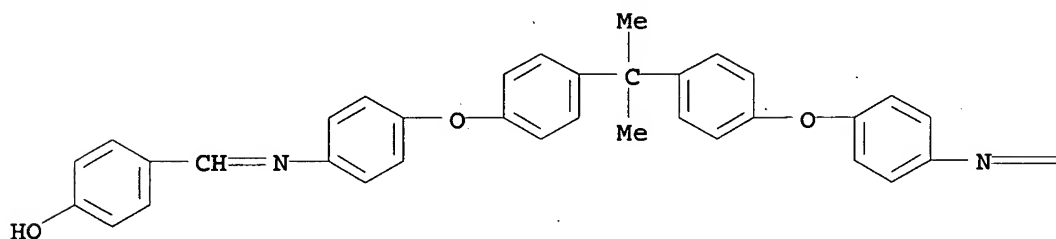


PAGE 1-B

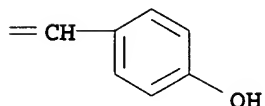


RN 138735-57-6 HCAPLUS  
 CN Phenol, 4,4'-[(1-methylethylidene)bis(4,1-phenyleneoxy-4,1-phenylenenitrilomethylidyne)]bis- (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 1-B



L21 ANSWER 30 OF 41 HCAPLUS COPYRIGHT 2005 ACS on STN  
 AN 1991:633824 HCAPLUS  
 DN 115:233824  
 TI Preparation of aromatic ether-ketone polyamines for use as  
 monomers and crosslinking agents  
 IN Kohli, Dalip K.  
 PA American Cyanamid Co., USA  
 SO U.S., 17 pp.  
 CODEN: USXXAM  
 DT Patent  
 LA English  
 FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI US 5026872	A	19910625	US 1984-576231	19840201
PRAI US 1984-576231		19840201		

OS MARPAT 115:233824

AB The title compds., with the structure  $H_2NC_6H_4Z_1O-p-C_6H_4CO_2C_6H_4NH_2$  [ $Z_1$  = direct bond,  $CO-p-C_6H_4O-p-C_6H_4$ ,  $CO-p-C_6H_4O(CH_2)_1-10$ ,  $CO-p-C_6H_4O-p-C_6H_4CMe_2-p-C_6H_4$ ,  $O-p-C_6H_4CO-p-C_6H_4O-p-C_6H_4CMe_2-p-C_6H_4$ ;  $Z_2$  = direct bond,  $p-C_6H_4C-p-C_6H_4=$ ], are especially useful in curing of epoxy resins. Thus, 3-amino-4'-(m-aminophenoxy)benzophenone (I) was prepared from m-aminophenol and 3-amino-4'-chlorobenzophenone (prepared by reduction of reaction products of m-O<sub>2</sub>NC<sub>6</sub>H<sub>4</sub>COCl with PhCl). Curing Araldite MY020 with 0.75 phr I gave a product with modulus 620 kpsi and tensile strength 17.8 kpsi; vs. 567 and 18.4, resp., with 4,4'-bis(m-aminophenoxy) benzophenone instead of I.

IC ICM C07D207-452  
ICS C07C211-00; C07C213-00; C07C221-00

NCL 548521000

CC 37-6 (Plastics Manufacture and Processing)  
Section cross-reference(s): 25, 35

ST ether ketone diamine prep; epoxy resin crosslinking agent; aminoaminophenoxybenzophenone; aminochlorobenzophenone reaction aminophenol; nitrobenzoyl chloride reaction chlorobenzene

IT Epoxy resins, uses and miscellaneous  
RL: USES (Uses)  
(crosslinking agents for, ether-ketone polyamines as)

IT Crosslinking agents  
(for epoxy resins, ether-ketone polyamines as, preparation of)

IT Amines, preparation  
RL: PREP (Preparation)  
(poly-, ether-ketone-, manufacture of)

IT 136615-67-3P 136615-69-5P 136615-71-9P 137284-85-6P  
RL: PREP (Preparation)  
(crosslinked, with high strength, manufacture of)

IT 7497-60-1P, 4-Nitro-4'-chlorobenzophenone 62810-38-2P  
RL: PEP (Physical, engineering or chemical process); RCT (Reactant); PREP (Preparation); PROC (Process); RACT (Reactant or reagent)  
(preparation and reduction of)

IT 4913-77-3P, 4-Amino-4'-chlorobenzophenone 62261-26-1P, 3-Amino-4'-chlorobenzophenone  
RL: PREP (Preparation)  
(preparation of, and reaction with aminophenol)

IT 131840-88-5P 136615-66-2P 136615-68-4P 136615-70-8P 136641-60-6P  
RL: PREP (Preparation)  
(preparation of, as curing agent for epoxy resins)

IT 121-90-4, m-Nitrobenzoyl chloride 122-04-3, p-Nitrobenzoyl chloride  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(reaction of, with chlorobenzene)

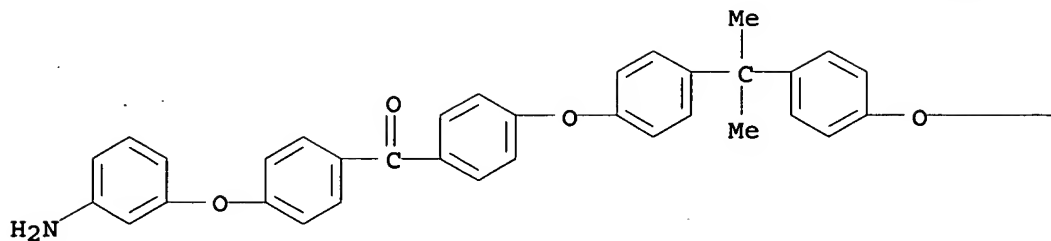
IT 108-90-7, Chlorobenzene, reactions  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(reaction of, with nitrobenzoyl chloride)

IT 131840-88-5P 136615-68-4P  
RL: PREP (Preparation)  
(preparation of, as curing agent for epoxy resins)

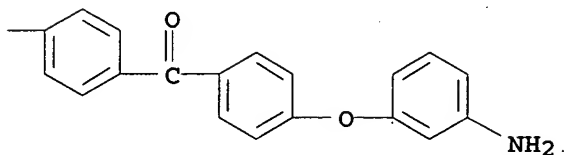
RN 131840-88-5 HCAPLUS

CN Methanone, [(1-methylethylidene)bis(4,1-phenyleneoxy-4,1-phenylene)]bis[[4-(3-aminophenoxy)phenyl]- (9CI) (CA INDEX NAME)

PAGE 1-A



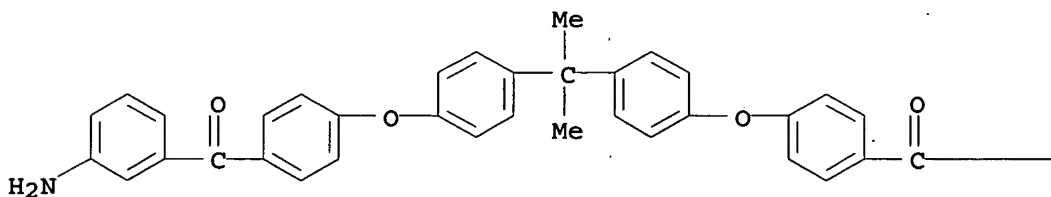
PAGE 1-B



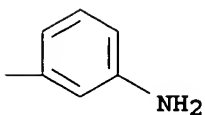
RN 136615-68-4 HCAPLUS

CN Methanone, [(1-methylethylidene)bis(4,1-phenyleneoxy-4,1-phenylene)]bis[(3-aminophenyl)]- (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 1-B



L21 ANSWER 31 OF 41 HCAPLUS COPYRIGHT 2005 ACS on STN

AN 1991:430043 HCAPLUS

DN 115:30043

TI Intramolecular cyclization of pendant phenylethynyl groups as a route to solvent resistance in poly(phenylquinoxalines)

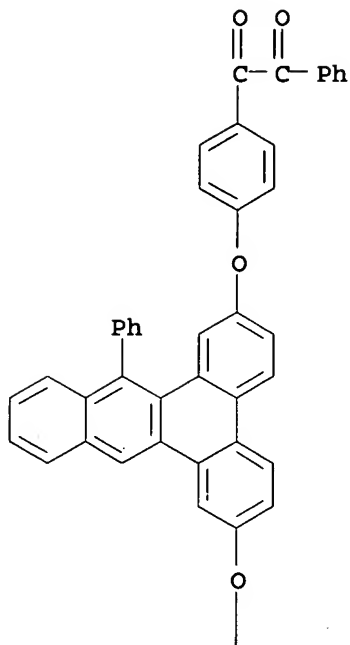
KATHLEEN FULLER EIC 1700 REMSON 4B28 571/272-2505

- AU Lindley, Patricia M.; Reinhardt, Bruce A.  
 CS Air Force Mater. Lab., Wright Res. and Dev. Cent., Wright-Patterson Air Force Base, OH, 45433-6533, USA  
 SO Journal of Polymer Science, Part A: Polymer Chemistry (1991), 29(7), 1061-71  
 CODEN: JPACEC; ISSN: 0887-624X  
 DT Journal  
 LA English  
 AB Biphenyl-based bisbenzil monomers containing pendent phenylethynyl groups in the 2,2'-positions were condensed with 3,3'-diaminobenzidine to prepare high-mol.-weight polyphenylquinoxalines. Thermal cure of these polymers at 193° caused an intramol. cyclization of the phenylethynyl groups to give the rigid 9-phenyldibenzanthracene system in the backbone of the polymer. The initial, uncured polymers formed tough films which were soluble in m-cresol and chlorinated solvent, but after thermal cure the films became insol. in all common organic solvents and acids while maintaining their toughness. DSC scans of the cured materials showed small residual exotherms indicating that after vitrification even the intramol. rotation required for the cyclization reaction became restricted.  
 CC 35-5 (Chemistry of Synthetic High Polymers)  
 ST polyphenylquinoxaline polyether; bisbenzil polymer aminobenzidine; phenylethynyl contg polyether polyphenylquinoxaline; intramol cyclization polyphenylquinoxaline polyether  
 IT Polymerization  
     (of biphenyl-based bisbenzils containing pendent phenylethynyl groups, with diaminobenzidine)  
 IT Ring closure and formation  
     (of polyphenylquinoxalines containing phenylethynyl groups)  
 IT Polyethers, preparation  
     RL: SPN (Synthetic preparation); PREP (Preparation)  
     (polyphenylquinoxaline-, phenylethynyl- and phenyldibenzanthracenegrup-containing, preparation and properties of)  
 IT 6161-50-8, 3,3'-Dimethoxybiphenyl  
     RL: RCT (Reactant); RACT (Reactant or reagent)  
     (iodination of)  
 IT 108057-44-9DP, thermally cyclized 108057-46-1DP, thermally cyclized  
     111839-22-6DP, thermally cyclized 134500-13-3DP, thermally cyclized  
     RL: SPN (Synthetic preparation); PREP (Preparation)  
     (phenyldibenzanthracene group-containing, preparation and properties of)  
 IT 111875-87-7P  
     RL: SPN (Synthetic preparation); PREP (Preparation)  
     (preparation and acidic removal of protecting groups from)  
 IT 111875-88-8P  
     RL: SPN (Synthetic preparation); PREP (Preparation)  
     (preparation and condensation of, with nitrobenzil)  
 IT 19179-32-9P  
     RL: SPN (Synthetic preparation); PREP (Preparation)  
     (preparation and conversion of, to alc.)  
 IT 54391-31-0P, 2,2'-Diiodobenzidine  
     RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
     (preparation and diazotization and thermal decomposition of)  
 IT 111875-86-6P  
     RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
     (preparation and phenylethynylation of)  
 IT 54628-94-3P 108057-43-8P 108057-45-0P 108057-47-2P  
     RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent).

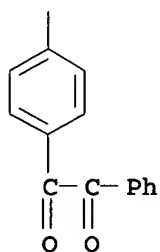
(preparation and polymerization of, with diaminobenzidine)  
IT 54628-95-4P 54724-09-3P 108057-44-9P 108057-46-1P 108057-48-3P  
108093-92-1P 108136-28-3P 111839-22-6P 134500-12-2P 134500-13-3P  
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
(preparation and properties of)  
IT 134600-81-0P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
(Reactant or reagent)  
(preparation and reaction with copper phenylacetylide)  
IT 19179-37-4P 111875-85-5P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
(Reactant or reagent)  
(preparation and reaction with dihydropyran)  
IT 134600-82-1P 134600-83-2P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
(Reactant or reagent)  
(preparation and reaction with nitrobenzil)  
IT 108093-91-0P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP  
(Preparation); RACT (Reactant or reagent)  
(preparation and reaction with phenylenediamine)  
IT 19618-17-8P, 3,3'-Diiodoazoxybenzene  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
(Reactant or reagent)  
(preparation and reduction and rearrangement of)  
IT 108117-85-7P 108117-86-8P 134600-84-3P  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(preparation of, as model compound for intramol. cycloaddn. reactions of  
biphenyl-based bisbenzil monomers containing phenylethynyl  
groups)  
IT 95-54-5, o-Phenylenediamine, reactions  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(reaction of, with bis(phenylglyoxaloylphenoxy)phenylbenzotriphenylene)  
IT 22711-24-6, 4-Nitrobenzil  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(reaction of, with dihydroxybis(phenylethynyl)biphenyls)  
IT 25512-65-6, Dihydropyran  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(reaction of, with dihydroxydiiodobiphenyl)  
IT 13146-23-1, Copper phenylacetylide  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(reaction of, with dihydroxydiiodobiphenyl bis(tetrahydropyranyl)  
derivative)  
IT 92-88-6, 4,4'-Dihydroxybiphenyl 612-76-0, 3,3'-Dihydroxybiphenyl  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(reaction of, with nitrobenzil)  
IT 645-00-1, 1-Iodo-3-nitrobenzene  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(reduction of, with alc. sodium hydroxide solns.)  
IT 108093-91-0P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP  
(Preparation); RACT (Reactant or reagent)  
(preparation and reaction with phenylenediamine)  
RN 108093-91-0 HCAPLUS  
CN Ethanedione, 1,1'-[(9-phenylbenzo[b]triphenylene-2,7-diyl)bis(oxy-4,1-  
phenylene)]bis[2-phenyl- (9CI) (CA INDEX NAME)]



PAGE 1-A



PAGE 2-A



L21 ANSWER 32 OF 41 HCAPLUS COPYRIGHT 2005 ACS on STN  
 AN 1991:165137 HCAPLUS  
 DN 114:165137  
 TI Preparation of aromatic diamines and their maleimide derivatives for  
 manufacture of polyimides  
 IN Young, Stella Margaret; Mayo, Richard Andrew  
 PA Imperial Chemical Industries PLC, UK  
 SO Eur. Pat. Appl., 12 pp.  
 CODEN: EPXXDW  
 DT Patent  
 LA English  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 392680	A2	19901017	EP 1990-303007	19900320
	EP 392680	A3	19920304		

R: AT, BE, CH, DE, ES, FR, GB, IT, LI, LU, NL, SE

GB 2230270	A1	19901017	GB 1989-8395	19890413
JP 02292243	A2	19901203	JP 1990-93290	19900410
PRAI GB 1989-8393	A	19890413		
GB 1989-8395	A	19890413		

OS MARPAT 114:165137

AB **Monomers** ZR1XR2YR3YR2XR1Z (I) (R1 = 1,3-phenylene; R2 = 1,4-phenylene; R3 = phenylene or polyarom. groups containing  $\geq 2$  aromatic units linked together by CO, SO, SO<sub>2</sub>, S, O, CMe<sub>2</sub>, or other aliphatic groups; X = CO, SO, SO<sub>2</sub>; Y = O, S; Z = NH<sub>2</sub> or maleimide radicals) are prepared and polymerized to give polyimides with low glass transition temperature (T<sub>g</sub>) and melt viscosity. Thus, a polymer prepared by polycondensation of 0.02 mol pyromellitic anhydride with 0.02 mol I (R3 = 1,4-phenylene; X = SO<sub>2</sub>; Y = O; Z = NH<sub>2</sub>) was compression molded at 350° to give a clear yellow molding which had inherent viscosity 0.36 (0.5% in concentrate H<sub>2</sub>SO<sub>4</sub>) and T<sub>g</sub> 257°.

IC ICM C07C225-22

ICS C07C317-22; C07C317-36; C07D487-04; C08G073-10

CC 35-5 (Chemistry of Synthetic High Polymers)

ST arom polyimide prepn; polyimide compression molding; low melt viscosity polyimide prepn

IT Polyimides, preparation

RL: PREP (Preparation)

(aromatic, preparation of, with low glass transition temperature and melt viscosity)

IT 132917-90-9P 133080-82-7P 133080-84-9P

RL: RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)

(preparation and polymerization of)

IT 1623-91-2P, 4,4'-Diphenoxydiphenyl sulfone 14984-21-5P, 4,4'-Diphenoxybenzophenone 115365-01-0P 132878-80-9P 132902-88-6P 133080-80-5P 133080-81-6P 133080-83-8P

RL: PREP (Preparation)

(preparation of)

IT 132852-74-5P 132852-75-6P 132852-76-7P 132852-83-6P 132878-81-0P 132878-82-1P 132902-89-7P 132917-91-0P

RL: PREP (Preparation)

(preparation of, with low glass transition temperature and melt viscosity)

IT 108-95-2, Phenol, reactions

RL: RCT (Reactant); RACT (Reactant or reagent)

(reaction of, with difluorobenzophenone)

IT 123-31-9, 1,4-Benzenediol, reactions

RL: RCT (Reactant); RACT (Reactant or reagent)

(reaction of, with fluoroaminodiphenylsulfone)

IT 64318-10-1

RL: RCT (Reactant); RACT (Reactant or reagent)

(reaction of, with hydroquinone)

IT 345-92-6, 4,4'-Difluorobenzophenone

RL: RCT (Reactant); RACT (Reactant or reagent)

(reaction of, with phenol)

IT 132917-90-9P 133080-84-9P

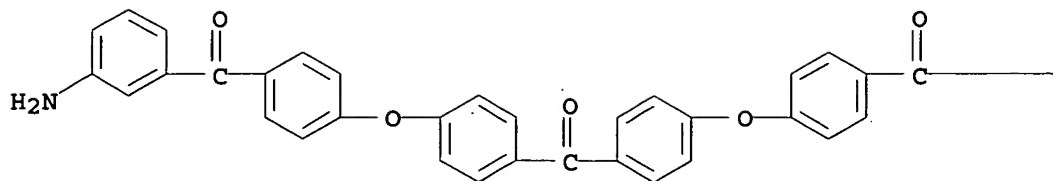
RL: RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)

(preparation and polymerization of)

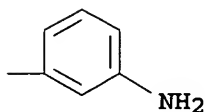
RN 132917-90-9 HCAPLUS

CN Methanone, bis[4-[4-(3-aminobenzoyl)phenoxy]phenyl]- (9CI) (CA INDEX NAME)

PAGE 1-A

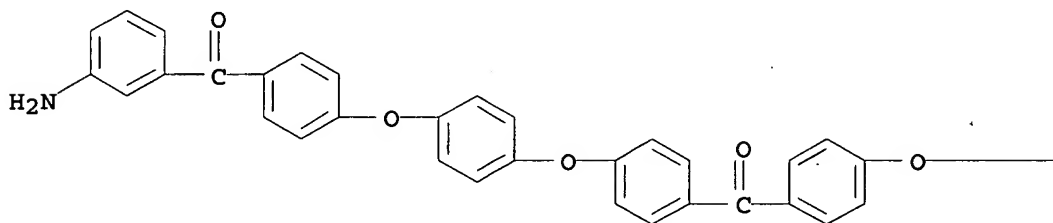


PAGE 1-B

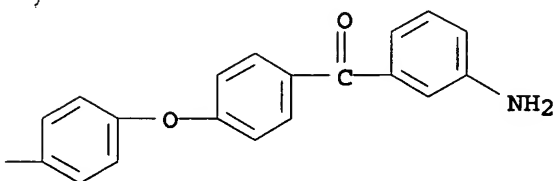


RN 133080-84-9 HCAPLUS  
CN Methanone, bis[4-[4-[4-(3-aminobenzoyl)phenoxy]phenoxy]phenyl] - (9CI) (CA INDEX NAME)

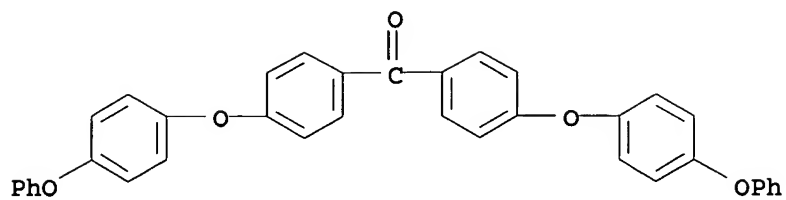
PAGE 1-A



PAGE 1-B

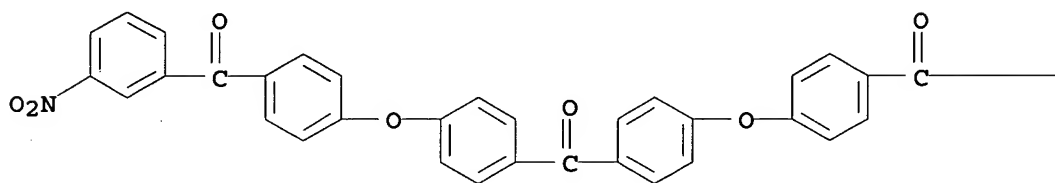


IT 115365-01-0P 133080-80-5P 133080-83-8P  
RL: PREP (Preparation)  
(preparation of)  
RN 115365-01-0 HCAPLUS  
CN Methanone, bis[4-(4-phenoxyphenoxy)phenyl] - (9CI) (CA INDEX NAME)

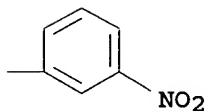


RN 133080-80-5 HCAPLUS  
CN Methanone, bis[4-[4-(3-nitrobenzoyl)phenoxy]phenyl] - (9CI) (CA INDEX NAME)

PAGE 1-A

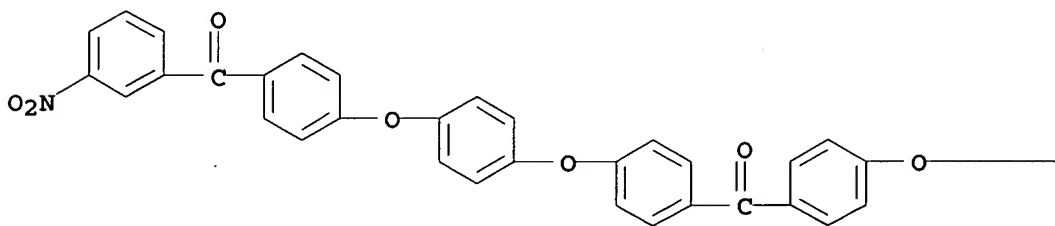


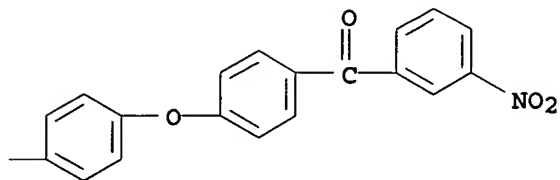
PAGE 1-B



RN 133080-83-8 HCAPLUS  
CN Methanone, bis[4-[4-[4-(3-nitrobenzoyl)phenoxy]phenoxy]phenyl] - (9CI) (CA INDEX NAME)

PAGE 1-A





- L21 ANSWER 33 OF 41 HCAPLUS COPYRIGHT 2005 ACS on STN  
 AN 1990:516434 HCAPLUS  
 DN 113:116434  
 TI Thermoset resins containing sterically hindered alkyne groups for reduced crosslink density  
 AU Unroe, Marilyn R.; Reinhardt, Bruce A.  
 CS Nonmet. Mater. Div., Wright Res. Dev. Cent., Wright-Patterson Air Force Base, OH, 45433-6533, USA  
 SO Journal of Polymer Science, Part A: Polymer Chemistry (1990), 28(8), 2207-21  
 CODEN: JPACEC; ISSN: 0887-624X  
 DT Journal  
 LA English  
 AB A series of thermoset matrix materials with phenylethynyl and phenoxyphenylethynyl end groups were prepared to assess the extent of crosslinking in the cured resins by thermoanal. and thermomech. methods. These material with varying flexibility and thermal stability of both the end group and backbone were evaluated against a group of material known to contain a substantial number of primary acetylenic thermal crosslinking sites. The evaluation indicated increased thermooxidative stability of the secondary acetylenic materials over the primary acetylenic systems at  $\leq 312^\circ$ . However, at  $> 312^\circ$ , the secondary systems were less thermooxidatively stable than the primary structures due to the thermal decomposition of the Ph pendants near  $400-450^\circ$ . Cure exotherms for the **monomers** exhibited typical Gaussian behavior with discernable cure onsets and maximum Cure maximum for the secondary acetylene quinoxalines were close to their thermal decomposition temperature ( $450^\circ$ ). Percentages of weight retained varied 64-92% after isothermal aging at  $312^\circ$  for 200 h in circulating air. Glass temps. of the secondary systems more closely approximated the values calculated for linear homopolymers of similar structure. The increased linearity of the cured secondary systems was further verified by fracture anal. which indicated a 20% increase over the room temperature value of the observed fracture toughness for its comparable primary system analog.  
 CC 37-6 (Plastics Manufacture and Processing)  
 ST alkyne terminated resin crosslinking stability  
 IT Polymerization  
     (of secondary alkyne-terminated **monomers**, in preparation of thermoset resins)  
 IT Glass temperature and transition  
     (of thermoset resins from secondary alkyne-terminated **monomers**)  
 IT Polyacetylenes, preparation  
     RL: SPN (Synthetic preparation); PREP (Preparation)  
     (preparation and thermal and mech. properties and crosslink d. of)  
 IT 67317-94-6P 83694-66-0P 96250-69-0P **96250-71-4P**  
     **96250-73-6P** 96927-23-0P 96927-25-2P 96959-05-6P

129133-82-0P 129133-84-2P

RL: PEP (Physical, engineering or chemical process); SPN (Synthetic preparation); **PREP (Preparation)**; PROC (Process)

(preparation and polymerization of, for thermosetting resins)

IT 67317-95-7P 96250-68-9P 96250-70-3P 96250-72-5P 96250-74-7P  
96927-24-1P 96927-26-3P 96959-06-7P 129133-83-1P 129133-85-3P

RL: SPN (Synthetic preparation); PREP (Preparation)

(preparation and thermal and mech. properties and crosslink d. of)

IT **96250-71-4P 96250-73-6P**

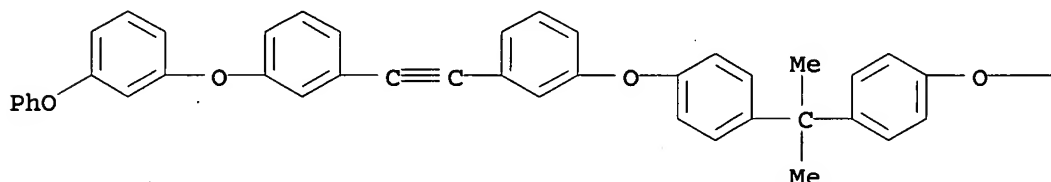
RL: PEP (Physical, engineering or chemical process); SPN (Synthetic preparation); **PREP (Preparation)**; PROC (Process)

(preparation and polymerization of, for thermosetting resins)

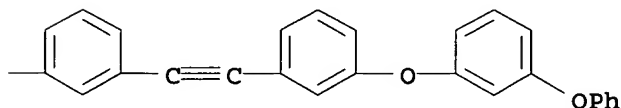
RN 96250-71-4 HCAPLUS

CN Benzene, 1,1'-(1-methylethylidene)bis[4-[3-[[3-(3-phenoxyphenoxy)phenyl]ethynyl]phenoxy]- (9CI) (CA INDEX NAME)

PAGE 1-A



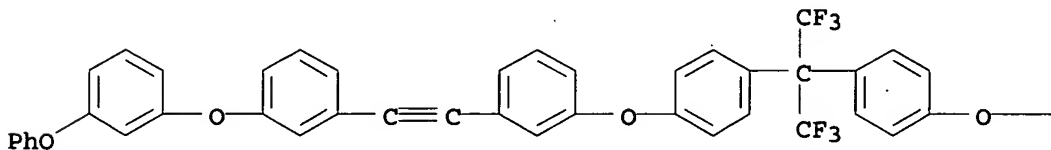
PAGE 1-B



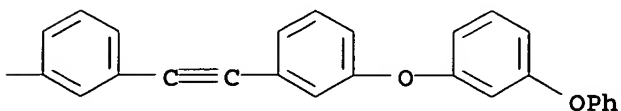
RN 96250-73-6 HCAPLUS

CN Benzene, 1,1'-[2,2,2-trifluoro-1-(trifluoromethyl)ethylidene]bis[4-[3-[[3-(3-phenoxyphenoxy)phenyl]ethynyl]phenoxy]- (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 1-B



L21 ANSWER 34 OF 41 HCAPLUS COPYRIGHT 2005 ACS on STN  
 AN 1990:460116 HCAPLUS  
 DN 113:60116  
 TI Manufacture of aromatic polyamide-polyimides  
 IN Matura, Shuichi; Suzuki, Hiroyuki; Miyadera, Yasuo  
 PA Hitachi Chemical Co., Ltd., Japan  
 SO Jpn. Kokai Tokkyo Koho, 6 pp.  
 CODEN: JKXXAF  
 DT Patent  
 LA Japanese  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 02011632	A2	19900116	JP 1988-160418	19880628
	JP 07119280	B4	19951220		
PRAI	JP 1988-160418		19880628		

AB The title polymers with good solubility in organic solvents are prepared by treating

trimellitic acid or its derivs. with monomers  
 (YC6H4CMe2C6H4O-p-C6H4)2X (X = CO, SO2; Y = NH2, NCO). Condensation of  
 45.4 g 2-(4-aminophenyl)-2-(3-hydroxyphenyl)propane with 21.8 g  
 4,4'-difluorobenzophenone in DMSO-PhCl at 165° for 4 h gave 45.5 g  
 4,4'-bis[3-(4-amino- $\alpha,\alpha$ -dimethylbenzyl)phenoxy]benzophenone  
 which (3.16 g) was heated with 0.96 g trimellitic anhydride in  
 N-methylpyrrolidone (I) containing P(OPh)3 at 200° for 5 h to give a  
 polymer softening at 158°, showing 5% weight loss temperature 480°,  
 and showing good solubility in DMF, I, dioxane, THF, and glyme.

IC ICM C08G073-14

ICS C08G018-34; C08G018-76

CC 35-5 (Chemistry of Synthetic High Polymers)

Section cross-reference(s): 37

ST polyamide polyimide prepn soly; trimellitic polyamide polyimide soly;  
 polyketone polyamide polyimide soly; polysulfone polyamide polyimide soly;  
 aminobenzylphenoxyphenyl ketone polyamide polyimide

IT Polyketones

Polysulfones, preparation

RL: PREP (Preparation)

(polyamide-polyimide-, preparation of, with solubility in organic solvents)

IT Polyimides, preparation

RL: PREP (Preparation)

(polyamide-polyketone-, preparation of, with solubility in organic solvents)

IT Polyimides, preparation

RL: PREP (Preparation)

(polyamide-polysulfone-, preparation of, with solubility in organic solvents)

IT Polyamides, preparation

RL: PREP (Preparation)

(polyimide-polyketone-, preparation of, with solubility in organic solvents)

IT Polyamides, preparation

RL: PREP (Preparation)

(polyimide-polysulfone-, preparation of, with solubility in organic solvents)

IT 80-07-9, 4,4'-Dichlorodiphenyl sulfone 345-92-6

RL: RCT (Reactant); RACT (Reactant or reagent)

(etherification of, with [(aminophenyl)propyl]phenol)

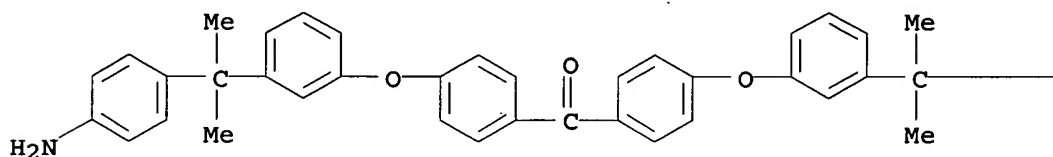
IT 111545-80-3, 2-(3-Hydroxyphenyl)-2-(4-aminophenyl)propane

RL: RCT (Reactant); RACT (Reactant or reagent)

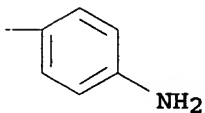
(etherification of, with difluorobenzophenone and dichlorodiphenyl sulfone)

IT 127602-03-3P 127602-05-5P  
 RL: PREP (Preparation)  
 (preparation of)  
 IT 128013-14-9P 128013-15-0P  
 RL: PREP (Preparation)  
 (preparation of, with solubility in organic solvents)  
 IT 127602-03-3P  
 RL: PREP (Preparation)  
 (preparation of)  
 RN 127602-03-3 HCAPLUS  
 CN Methanone, bis[4-[3-[1-(4-aminophenyl)-1-methylethyl]phenoxy]phenyl]-  
 (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 1-B



L21 ANSWER 35 OF 41 HCAPLUS COPYRIGHT 2005 ACS on STN  
 AN 1990:180398 HCAPLUS  
 DN 112:180398  
 TI Synthesis and characterization of acetylene-terminated aromatic amide resin precursors  
 AU Abraham, Tonson; Soloski, Edward J.; Benner, Charles L.; Evers, Robert C.  
 CS Res. Inst., Univ. Dayton, Dayton, OH, 45469-0001, USA  
 SO Journal of Polymer Science, Part A: Polymer Chemistry (1989), 27(13), 4305-18  
 CODEN: JPACEC; ISSN: 0887-624X  
 DT Journal  
 LA English  
 AB A series of 10 acetylene-terminated aromatic diamide monomers was synthesized by the Et3N-promoted reaction of bis[p-(m-chlorocarbonylphenoxy)phenyl] sulfone or bis[p-(m-chlorocarbonylphenoxy)phenyl] ketone with o-, m-, or p-ethynyl- and o- or p-(trimethylsilylethynyl)aniline. Yields were essentially quant. Structures were verified by IR and NMR spectroscopy and mass spectral data. Thermal characteristics of the monomers were investigated by DSC and TGA. The initial monomer glass transition temps. were generally well below the onset of polymerization which occurred in the 160-225° range for the terminal ethynyl monomers and in the 260-295° range for their trimethylsilylethynyl analogs. Onset of decomposition in air for the polymerized ethynyl-terminated monomers took place in the 400-485° range, while resins from the trimethylsilylethynyl monomers underwent breakdown at



substantially lower temperature

CC 37-2 (Plastics Manufacture and Processing)

ST acetylene terminated arom amide **monomer**; polymn acetylene terminated diamide

IT **Monomers**  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (acetylene-terminated aromatic diamides, preparation and characterization of)

IT Glass temperature and transition  
 Molecular structure  
 (of acetylene-terminated aromatic diamides)

IT Heat-resistant materials  
 (polymeric, from acetylene-terminated aromatic diamide **monomers**)

IT Polyketones  
 Polysulfones, preparation  
 RL: PEP (Physical, engineering or chemical process); PROC (Process)  
 (polyacetylene-polyamide-polyether-, aromatic, heat-resistant, preparation of,

from acetylene-terminated aromatic amide **monomers**)

IT Polyethers, preparation  
 RL: PEP (Physical, engineering or chemical process); PROC (Process)  
 (polyacetylene-polyamide-polyketone-, aromatic, heat-resistant, preparation of,

from acetylene-terminated aromatic amide **monomers**)

IT Polyethers, preparation  
 RL: PEP (Physical, engineering or chemical process); PROC (Process)  
 (polyacetylene-polyamide-polysulfone-, aromatic, heat-resistant, preparation of, from acetylene-terminated aromatic amide **monomers**)

IT Polyamides, preparation  
 RL: PEP (Physical, engineering or chemical process); PROC (Process)  
 (polyacetylene-polyether-polyketone-, aromatic, heat-resistant, preparation of,

from acetylene-terminated aromatic amide **monomers**)

IT Polyamides, preparation  
 RL: PEP (Physical, engineering or chemical process); PROC (Process)  
 (polyacetylene-polyether-polysulfone-, aromatic, heat-resistant, preparation of, from acetylene-terminated aromatic amide **monomers**)

IT Polyacetylenes, preparation  
 RL: PEP (Physical, engineering or chemical process); PROC (Process)  
 (polyamide-polyether-polyketone-, aromatic, heat-resistant, preparation of, from acetylene-terminated aromatic amide **monomers**)

IT Polyacetylenes, preparation  
 RL: PEP (Physical, engineering or chemical process); PROC (Process)  
 (polyamide-polyether-polysulfone-, aromatic, heat-resistant, preparation of, from acetylene-terminated aromatic amide **monomers**)

IT 7681-65-4, Cuprous iodide 13965-03-2, Dichlorobis(triphenylphosphine)pladium (II)  
 RL: CAT (Catalyst use); USES (Uses)  
 (catalysts, for reaction of iodoaniline with ethynyltrimethylsilane)

IT 105218-99-3P 105219-01-0P 105219-03-2P  
 105219-05-4P 105220-90-4P 105220-91-5P 126463-55-6P  
 126463-56-7P 126463-57-8P 126463-58-9P  
 RL: PEP (Physical, engineering or chemical process); SPN (Synthetic preparation); PREP (Preparation); PROC (Process)  
 (preparation and characterization of)

IT 103529-16-4P, 2-Trimethylsilylethynylaniline  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (preparation and demethylsilylation of)

IT 52670-38-9P, 2-Ethynylaniline  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT

(Reactant or reagent)  
 (preparation and reaction of, with carbonyl- and sulfonylbis(phenyleneoxy)dibenzoyl chlorides)

IT 100580-21-0P 105220-89-1P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
 (preparation and reaction of, with ethynyl- and trimethylsilylethynylanilines)

IT 29924-10-5P 31739-00-1P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
 (preparation and reaction of, with thionyl chloride)

IT 105219-02-1P 105359-89-5P 126482-45-9P 126482-46-0P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (preparation and thermooxidative stability of cured)

IT 99-06-9, m-Hydroxybenzoic acid, reactions  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (reaction of, with carbonyl- and sulfonylbis(fluorobenzenes))

IT 7719-09-7, Thionyl chloride  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (reaction of, with carbonyl- and sulfonylbis(phenyleneoxy)dibenzoic acids)

IT 615-43-0, 2-Iodoaniline  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (reaction of, with ethynyltrimethylsilane)

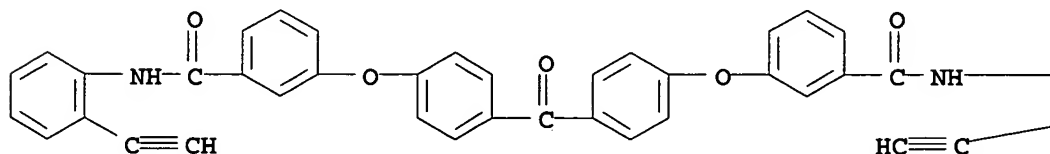
IT 345-92-6 383-29-9  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (reaction of, with hydroxybenzoic acid)

IT 1066-54-2, Ethynyltrimethylsilane  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (reaction of, with iodoaniline)

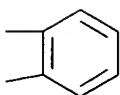
IT 105219-01-0P 105219-03-2P 105219-05-4P 126463-57-8P 126463-58-9P  
 RL: PEP (Physical, engineering or chemical process); SPN (Synthetic preparation); PREP (Preparation); PROC (Process)  
 (preparation and characterization of)

RN 105219-01-0 HCAPLUS  
 CN Benzamide, 3,3'-[carbonylbis(4,1-phenyleneoxy)]bis[N-(2-ethynylphenyl)-(9CI) (CA INDEX NAME)

PAGE 1-A



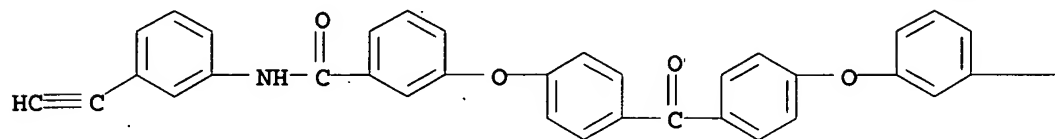
PAGE 1-B



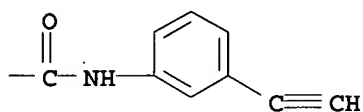
RN 105219-03-2 HCAPLUS

CN Benzamide, 3,3'-[carbonylbis(4,1-phenyleneoxy)]bis[N-(3-ethynylphenyl)-  
(9CI) (CA INDEX NAME)

PAGE 1-A



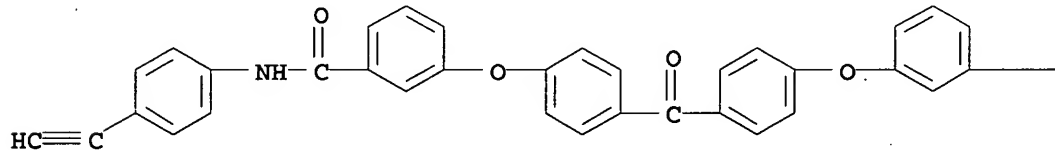
PAGE 1-B



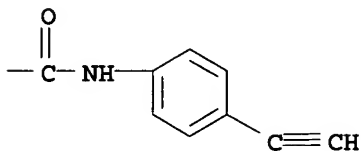
RN 105219-05-4 HCAPLUS

CN Benzamide, 3,3'-[carbonylbis(4,1-phenyleneoxy)]bis[N-(4-ethynylphenyl)-  
(9CI) (CA INDEX NAME)

PAGE 1-A



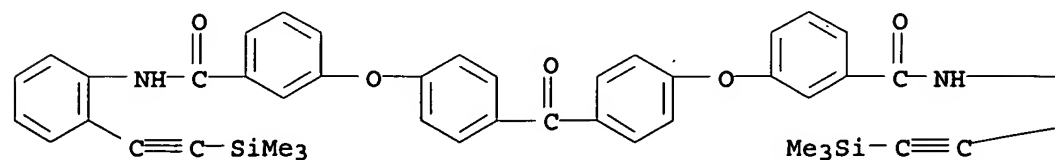
PAGE 1-B



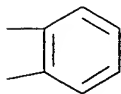
RN 126463-57-8 HCAPLUS

CN Benzamide, 3,3'-[carbonylbis(4,1-phenyleneoxy)]bis[N-[2-  
[(trimethylsilyl)ethynyl]phenyl]- (9CI) (CA INDEX NAME)

PAGE 1-A

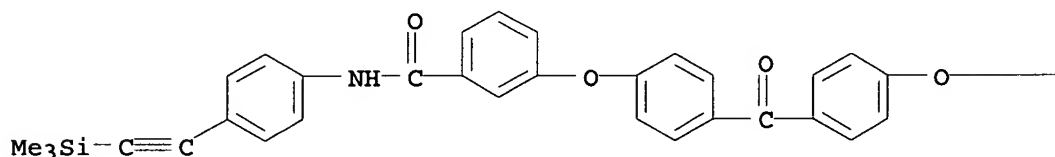


PAGE 1-B

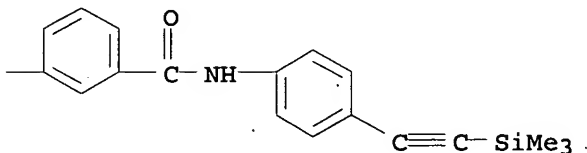


RN 126463-58-9 HCAPLUS  
 CN Benzamide, 3,3'-[carbonylbis(4,1-phenyleneoxy)]bis[N-[4-  
 [(trimethylsilyl)ethynyl]phenyl]- (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 1-B



L21 ANSWER 36 OF 41 HCAPLUS COPYRIGHT 2005 ACS on STN

AN 1988:493804 HCAPLUS

DN 109:93804

TI Preparation of aryl carbonyl compounds

IN Towle, Ian David Henderson

PA Raychem Ltd., UK

SO Eur. Pat. Appl., 10 pp.

CODEN: EPXXDW

DT Patent

LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 262919	A2	19880406	EP 1987-308608	19870929
	EP 262919	A3	19880720		
	EP 262919	B1	19910911		
	R: AT, BE, CH, DE, ES, FR, GB, IT, LI, NL, SE				
	AT 67171	E	19910915	AT 1987-308608	19870929
	JP 63101344	A2	19880506	JP 1987-249072	19870930
	US 4898983	A	19900206	US 1988-270401	19881107
PRAI	GB 1986-23510	A	19860930		
	US 1987-96416	B1	19870911		
	EP 1987-308608	A	19870929		
OS	MARPAT 109:93804				

KATHLEEN FULLER EIC 1700 REMSON 4B28 571/272-2505

AB Aryl carbonyl compds. with high degree of isomeric purity, useful for preparing poly(arylene ether ketones), are prepared with little byproduct formation by Friedel-Crafts reaction using Lewis acid catalysts in the presence of protic controlling agents such as alcs., H<sub>2</sub>O, carboxy compds., and sulfo compds. Thus, a cooled mixture of 75 mL CH<sub>2</sub>Cl<sub>2</sub> and 12.00 g AlCl<sub>3</sub> was treated in turn with BuOH 2.8, Ph<sub>2</sub>O 3.22, and p-fluorobenzoyl chloride 6 g and kept 6 h at room temperature to give bis[4-(4-fluorobenzoyl)phenyl] ether in 85% yield.

IC ICM C07C045-46  
ICS C07C045-47; C07C049-84; C07C049-813

CC 35-2 (Chemistry of Synthetic High Polymers)  
Section cross-reference(s): 25

ST aryl ketone prepn Friedel Crafts; fluorobenzoylphenyl ether prepn Friedel Crafts; butanol control aryl ketone prepn; **monomer** aryl ketone prepn; polyether polyketone **monomer** prepn

IT **Monomers**  
RL: PREP (Preparation)  
(aryl ketones, preparation of, Friedel-Crafts reaction for)

IT Friedel-Crafts reaction  
(in aryl ketone preparation, control of)

IT Ketones, preparation  
RL: PREP (Preparation)  
(aryl, preparation of, Friedel-Crafts reaction for, control of)

IT 92-94-4, p-Terphenyl 99-63-8, 1,3-Benzenedicarbonyl dichloride  
101-84-8, Diphenyl ether 324-74-3 403-43-0, 4-Fluorobenzoyl chloride  
462-06-6, Fluorobenzene 543-20-4, Succinyl chloride 1623-95-6,  
4-Phenoxybenzoyl chloride 2351-36-2, Naphthalene-2,6-dicarboxylic acid  
dichloride 2351-37-3  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(Friedel-Crafts reaction of)

IT 65-85-0, Benzoic acid, uses and miscellaneous 71-36-3, Butanol, uses and  
miscellaneous 79-09-4, Propionic acid, uses and miscellaneous  
RL: USES (Uses)  
(aryl ketone preparation by Friedel-Crafts reaction in presence of)

IT 14984-21-5P  
RL: RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)  
(preparation and Friedel-Crafts reaction of)

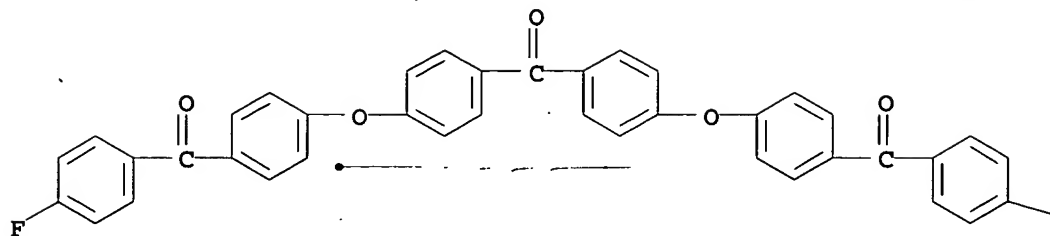
IT 14308-26-0P 16574-56-4P 40912-23-0P 68418-51-9P 95042-13-0P  
95042-14-1P, 4,4'-Bis(4-fluorobenzoyl)diphenyl ether 107241-17-8P  
116071-70-6P 116071-71-7P 116071-72-8P 116102-01-3P  
RL: PREP (Preparation)  
(preparation of, by Friedel-Crafts reaction)

IT 116071-70-6P  
RL: PREP (Preparation)  
(preparation of, by Friedel-Crafts reaction)

RN 116071-70-6 HCAPLUS

CN Methanone, bis[4-[4-(4-fluorobenzoyl)phenoxy]phenyl]- (9CI) (CA INDEX  
NAME)

PAGE 1-A



PAGE 1-B

L21 ANSWER 37 OF 41 HCAPLUS COPYRIGHT 2005 ACS on STN  
 AN 1988:493722 HCAPLUS  
 DN 109:93722  
 TI Simple synthesis of polyketones containing anthraquinone units  
 AU Ueda, Mitsuru; Sugita, Hiroya; Waragai, Takako  
 CS Fac. Eng., Yamagata Univ., Yamagata, 992, Japan  
 SO Polymer Journal (Tokyo, Japan) (1988), 20(5), 433-7  
 CODEN: POLJB8; ISSN: 0032-3896  
 DT Journal  
 LA English  
 AB Polyketones containing anthraquinone units were prepared by the direct polycondensation of 1,5-diphenoxyanthraquinone with aliphatic and aromatic dicarboxylic acids, in the presence of P2O5-methanesulfonic acid as condensing agent and solvent. Model compds. were prepared using monocarboxylic acids.  
 CC 35-5 (Chemistry of Synthetic High Polymers)  
 ST polyketone phenoxyanthraquinone dicarboxylic acid polymn; anthraquinone monomer dicarboxylic acid polyketone; phosphorus pentoxide condensing agent polyketone; methanesulfonic acid solvent polyketone condensation  
 IT Polymerization  
 (of diphenoxyanthraquinone with diacids, in presence of phosphorus pentoxide-methanesulfonic acid mixts.)  
 IT Polyketones  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (polyether-, diphenoxyanthraquinone-containing, preparation of, in phosphorus pentoxide-methane sulfonic acid mixts.)  
 IT Polyethers, preparation  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (polyketone-, diphenoxyanthraquinone-containing, preparation of, in phosphorus pentoxide-methane sulfonic acid mixts.)

IT Polymer degradation  
(thermal, of diphenoxyanthraquinone-containing polyether-polyketones,  
prepared in phosphorous pentoxide-methanesulfonic acid solution)

IT 1314-56-3, Phosphorus pentoxide, uses and miscellaneous  
RL: USES (Uses)  
(condensing agent, with methanesulfonic acid, for polymerization of  
diphenoxyanthraquinone with diacids)

IT 75-75-2, Methanesulfonic acid  
RL: USES (Uses)  
(condensing agent, with phosphorus pentoxide, for polymerization of  
diphenoxyanthraquinone with diacids)

IT 116164-00-2P  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(preparation of, from benzoic acid and diphenoxyanthraquinone in presence of  
phosphorus pentoxide-methanesulfonic acid mixts.)

IT 116146-36-2P  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(preparation of, from methoxybenzoic acid and diphenoxyanthraquinone in  
presence of phosphorus pentoxide-methanesulfonic acid mixts.)

IT 116146-35-1P  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(preparation of, from methylbenzoic acid and diphenoxyanthraquinone in  
presence of phosphorus pentoxide-methanesulfonic acid mixts.)

IT 99836-34-7P 115926-86-8P 115949-45-6P 115949-46-7P 115949-47-8P  
115965-10-1P 115967-57-2P 116000-51-2P 116018-32-7P 116018-33-8P  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(preparation of, in phosphorous pentoxide-methanesulfonic acid solution)

IT 65-85-0, Benzoic acid, reactions 99-04-7, m-Methylbenzoic acid  
100-09-4, p-Methoxybenzoic acid  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(reaction of, with diphenoxyanthraquinone, in presence of phosphorus  
pentoxide-methanesulfonic acid mixts.)

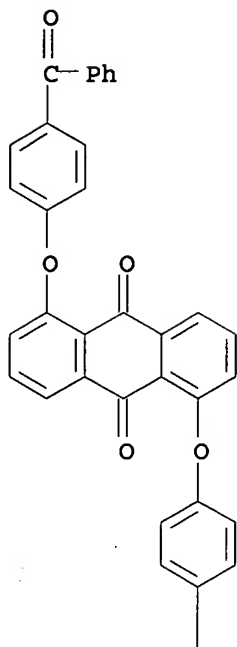
IT 82-21-3, 1,5-Diphenoxyanthraquinone  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(reactions of, with carboxylic and dicarboxylic acids, in phosphorus  
pentoxide-methane sulfonic acid mixts., model compds. and polymers  
from)

IT 116164-00-2P  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(preparation of, from benzoic acid and diphenoxyanthraquinone in presence of  
phosphorus pentoxide-methanesulfonic acid mixts.)

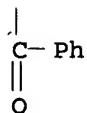
RN 116164-00-2 HCAPLUS

CN 9,10-Anthracenedione, 1,5-bis(4-benzoylphenoxy)- (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 2-A



IT 116146-36-2P

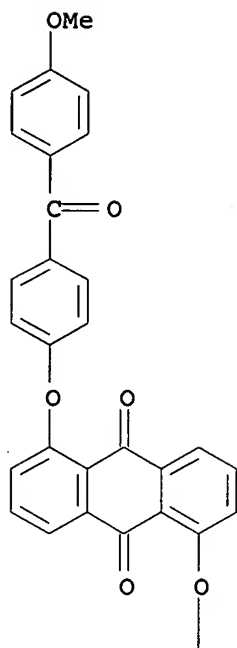
RL: SPN (Synthetic preparation); PREP (Preparation)  
(preparation of, from methoxybenzoic acid and diphenoxyanthraquinone in  
presence of phosphorus pentoxide-methanesulfonic acid mixts.)

RN 116146-36-2 HCAPLUS

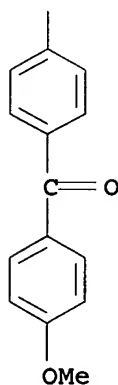
CN 9,10-Anthracenedione, 1,5-bis[4-(4-methoxybenzoyl)phenoxy]- (9CI) (CA  
INDEX NAME)



PAGE 1-A



PAGE 2-A



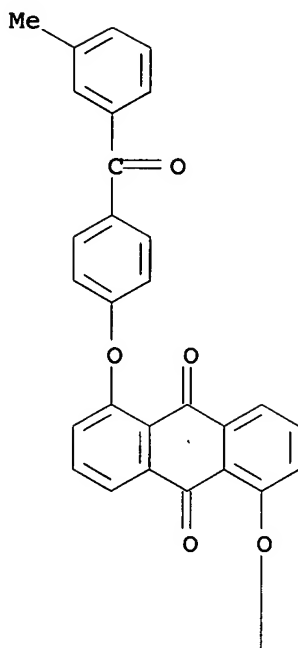
IT 116146-35-1P

RL: SPN (Synthetic preparation); PREP (Preparation)  
(preparation of, from methylbenzoic acid and diphenoxyanthraquinone in  
presence of phosphorus pentoxide-methanesulfonic acid mixts.)

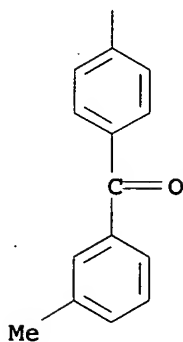
RN 116146-35-1 HCAPLUS

CN 9,10-Anthracenedione, 1,5-bis[4-(3-methylbenzoyl)phenoxy] - (9CI) (CA  
INDEX NAME)

PAGE 1-A



PAGE 2-A



L21 ANSWER 38 OF 41 HCAPLUS COPYRIGHT 2005 ACS on STN  
AN 1985:422954 HCAPLUS  
DN 103:22954  
TI The synthesis and properties of novel **monomers** containing aryl  
and aryloxyethynyl groups  
AU Unroe, M. R.; Reinhardt, B. A.; Arnold, F. E.  
CS Air Force Wright Aeronaut. Lab., Wright-Patterson Air Force Base, OH,  
45433, USA  
SO Polymer Preprints (American Chemical Society, Division of Polymer  
Chemistry) (1985), 26(1), 136-7  
CODEN: ACPPAY; ISSN: 0032-3934  
DT Journal  
LA English

KATHLEEN FULLER EIC 1700 REMSON 4B28 571/272-2505

OS CASREACT 103:22954

AB The title monomers, Z(1,3-C<sub>6</sub>H<sub>4</sub>C...CR)<sub>2</sub> (Z = aromatic doubling radical; R = Ph, H, C<sub>6</sub>H<sub>4</sub>OC<sub>6</sub>H<sub>4</sub>OPh, C<sub>6</sub>H<sub>4</sub>OC<sub>6</sub>H<sub>4</sub>SO<sub>2</sub>Ph), were prepared and their thermal and thermomech. properties were determined, as well as those of their homopolymers.

CC 35-2 (Chemistry of Synthetic High Polymers)

ST ethenyl monomer polymer thermal property; aryl ethenyl monomer polymer thermal property; aryloxyethynyl monomer polymer thermal property; glass temp ethenyl polymer

IT Heat-resistant materials  
(acetylene derivative polymers)

IT Glass temperature and transition  
(of acetylene derivative polymers)

IT Polymerization  
(of acetylene derivs.)

IT Polyacetylenes  
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
(preparation and thermal properties of)

IT 51624-44-3  
RL: USES (Uses)  
(dehydration by, of bis(dicarboxyphenyl)hexafluoropropane dianhydride amic acid)

IT 96959-03-4P  
RL: PEP (Physical, engineering or chemical process); SPN (Synthetic preparation); PREP (Preparation); PROC (Process)  
(preparation and dehydration of)

IT 67317-94-6P 67317-95-7P 83694-66-0P 96250-68-9P 96250-69-0P  
96250-70-3P 96250-71-4P 96250-72-5P 96250-73-6P  
96250-74-7P 96927-23-0P 96927-24-1P 96927-25-2P 96927-26-3P  
96959-05-6P 96959-06-7P 97046-91-8P 97046-92-9P 97105-54-9P  
97105-55-0P  
RL: PRP (Properties); SPN (Synthetic preparation); PREP  
(Preparation)  
(preparation and thermal properties of)

IT 75013-38-6 75142-98-2  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(reaction of, with (bromophenoxy)benzil)

IT 91-95-2 2676-59-7  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(reaction of, with benzil derivs.)

IT 536-74-3  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(reaction of, with bis(bromophenoxy)benzene or  
bis(bromophenoxy)diphenyl sulfone)

IT 22711-24-6  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(reaction of, with bromophenol)

IT 96990-61-3 96990-62-4  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(reaction of, with diaminobenzidine or tetraaminodiphenyl ether)

IT 83694-70-6  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(reaction of, with monoacetylene compds.)

IT 591-20-8  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(reaction of, with nitrobenzil)

IT 32220-74-9 79915-96-1  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(reaction of, with phenylacetylene)

IT 29338-47-4

RL: RCT (Reactant); RACT (Reactant or reagent)  
(reduction of)

IT 96250-71-4P 96250-73-6P

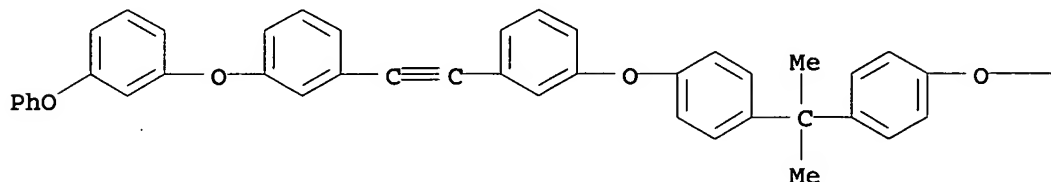
RL: PRP (Properties); SPN (Synthetic preparation); PREP  
(Preparation)

(preparation and thermal properties of)

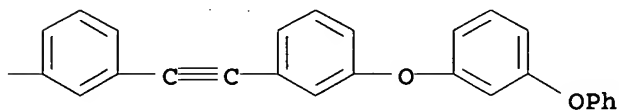
RN 96250-71-4 HCAPLUS

CN Benzene, 1,1'-(1-methylethylidene)bis[4-[3-[[3-(3-phenoxyphenoxy)phenyl]ethynyl]phenoxy]- (9CI) (CA INDEX NAME)

PAGE 1-A



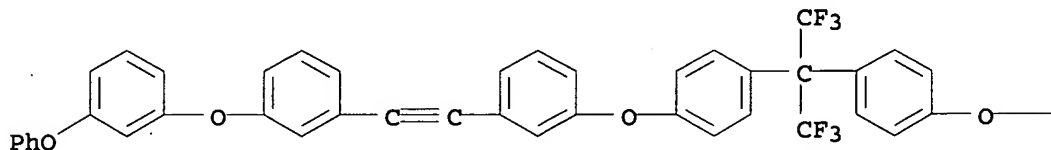
PAGE 1-B



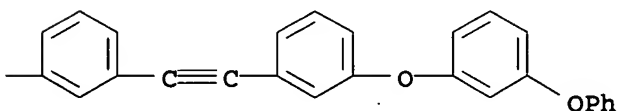
RN 96250-73-6 HCAPLUS

CN Benzene, 1,1'-[2,2,2-trifluoro-1-(trifluoromethyl)ethylidene]bis[4-[3-[[3-(3-phenoxyphenoxy)phenyl]ethynyl]phenoxy]- (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 1-B



L21 ANSWER 39 OF 41 HCAPLUS COPYRIGHT 2005 ACS on STN

AN 1984:34975 HCAPLUS

DN 100:34975

TI Polyphenol allyl derivatives useful in polymerization and crosslinking

IN Laval, Francois; Madec, Pierre Jean; Marechal, Ernest

PA Commissariat a l'Energie Atomique , Fr.  
 SO Eur. Pat. Appl., 29 pp.  
 CODEN: EPXXDW  
 DT Patent  
 LA French  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 88027	A1	19830907	EP 1983-400429	19830302
	EP 88027	B1	19860312		
	R: DE, GB, IT, NL				
	FR 2522649	A1	19830909	FR 1982-3522	19820303
	FR 2522649	B1	19870710		
	JP 58164537	A2	19830929	JP 1983-33914	19830303
	US 4647642	A	19870303	US 1985-707534	19850304
PRAI	FR 1982-3522	A	19820303		
	US 1983-471537	A1	19830302		

AB The title compds. are prepared by the reaction of polyphenols with allyl glycidyl ether (I) [106-92-3]. Thus, adding 10 g C12H25NMe2 to 228 g bisphenol A [80-05-7] and 228 g I stirred at 120° and stirring 2 h at this temperature gave 466 g bisphenol A bis[3-(allyloxy)-2-hydroxypropyl] ether [63119-89-1]. Heating 456 g this compound, 134 g O(SiHMe2)2, and 1 mL 1% H2PtCl6 slowly to and 1 h at 70° gave a transparent block polymer [88266-84-6], mol. weight >10,000, which was readily soluble in organic solvents.

IC C07C043-23; C07C049-84; C07C069-96; C07C147-06; C08F016-32; C08G018-32; C08G077-42; C07C041-03

CC 35-2 (Chemistry of Synthetic High Polymers)

Section cross-reference(s): 25

ST bisphenol A allyloxyhydroxypropyl ether; allyl glycidyl ether reaction polyphenol; allyloxyhydroxypropyl ether polyphenol; siloxane polyether manuf; tetramethyldisiloxane polymn allyloxyhydroxypropyl ether

IT Urethane polymers, preparation

RL: IMF (Industrial manufacture); PREP (Preparation)

(manufacture of, from bisphenol (allyloxy)hydroxypropyl ether)

IT Siloxanes and Silicones, preparation

RL: IMF (Industrial manufacture); PREP (Preparation)

(polyether-, manufacture of, intermediates for)

IT Siloxanes and Silicones, preparation

RL: IMF (Industrial manufacture); PREP (Preparation)

(polyether-, manufacture of, monomers for)

IT Siloxanes and Silicones, preparation

RL: IMF (Industrial manufacture); PREP (Preparation)

(polysulfone-, manufacture of, intermediates for)

IT Siloxanes and Silicones, preparation

RL: IMF (Industrial manufacture); PREP (Preparation)

(polysulfone-, manufacture of, monomers for)

IT Polyethers

Polysulfones

RL: IMF (Industrial manufacture); PREP (Preparation)

(siloxane-, manufacture of, intermediates for)

IT Polyethers

Polysulfones

RL: IMF (Industrial manufacture); PREP (Preparation)

(siloxane-, manufacture of, monomers for)

IT 63119-89-1DP, polymers with hydrogen-terminated siloxanes 88215-56-9P

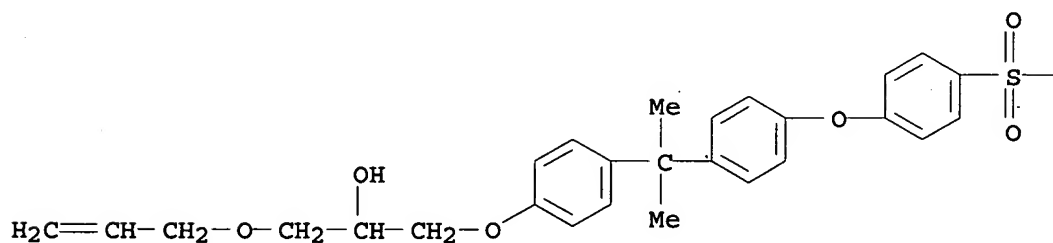
88266-84-6P 88266-85-7P 88266-86-8P 88266-87-9P 88384-62-7P

RL: IMF (Industrial manufacture); PRP (Properties); PREP (Preparation)

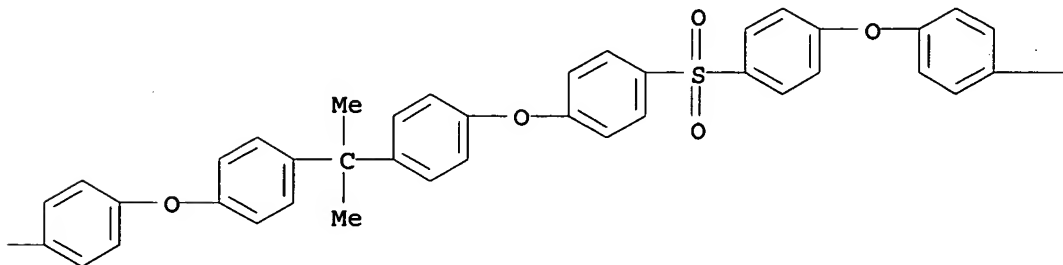
(manufacture and properties of)

IT 63119-89-1P 88216-39-1P  
 RL: PREP (Preparation)  
 (preparation of)  
 IT 80-05-7, reactions 88216-38-0  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (reaction of, with allyl glycidyl ether)  
 IT 106-92-3  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (reaction of, with polyphenols)  
 IT 88216-39-1P  
 RL: PREP (Preparation)  
 (preparation of)  
 RN 88216-39-1 HCAPLUS  
 CN 2-Propanol, 1,1'-[(1-methylethylidene)bis[4,1-phenyleneoxy-4,1-phenylenesulfonyl-4,1-phenylene(1-methylethylidene)-4,1-phenyleneoxy-4,1-phenylenesulfonyl-4,1-phenylene(1-methylethylidene)-4,1-phenyleneoxy]]bis[3-(2-propenyl)- (9CI) (CA INDEX NAME)

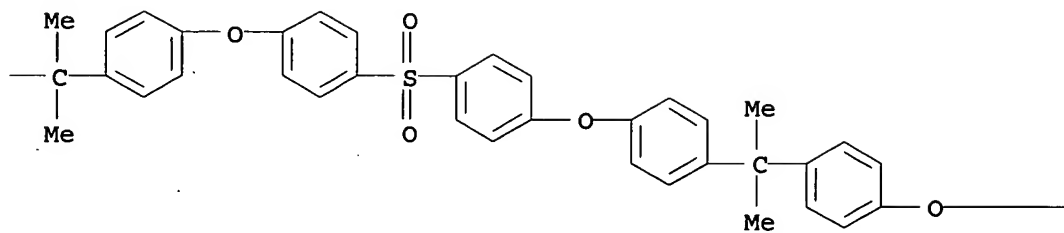
PAGE 1-A



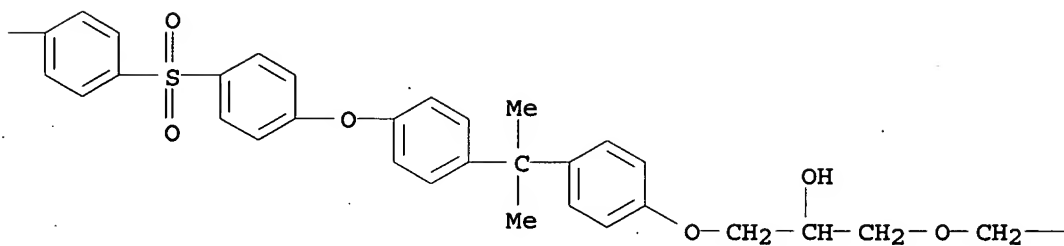
PAGE 1-B



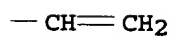
PAGE 1-C



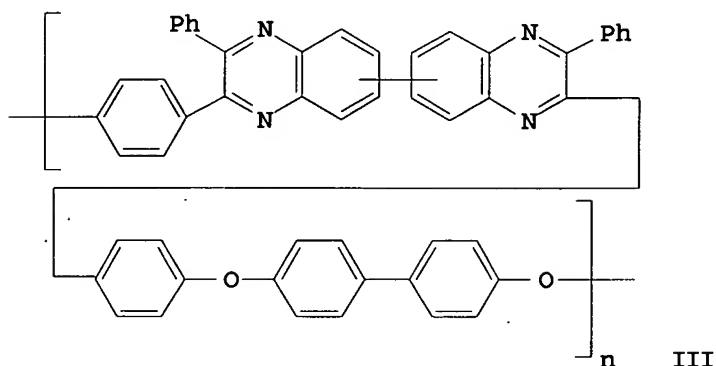
PAGE 1-D



PAGE 1-E



DN 88:23447  
 TI Diether polyphenylquinoxalines. Monomers via nitro displacement. Carbon-13 NMR analysis of monomers and polymers  
 AU Relles, H. M.; Orlando, C. M.; Heath, D. R.; Schluez, R. W.; Manello, J. S.; Hoff, S.  
 CS Res. Dev. Cent., Gen. Electr., Schenectady, NY, USA  
 SO Journal of Polymer Science, Polymer Chemistry Edition (1977), 15(10), 2441-51  
 CODEN: JPLCAT; ISSN: 0449-296X  
 DT Journal  
 LA English  
 GI



AB Bisbenzils (I) were prepared by nucleophilic aromatic nitro displacement reactions and the I, some model compds., and some polyphenylquinoxaline polymers prepared from them were analyzed by <sup>13</sup>C NMR. Thus, 4,4'-bis(4-benzilyloxy)biphenyl (II) [54628-94-3] was polymerized with 3,3',4,4'-tetraaminodiphenyl ether to give the polyphenylquinoxaline III [54724-09-3]. II was prepared by reaction of 4-nitrobenzil [22711-24-6] with 4-methylphenol [106-44-5] in DMSO.

CC 35-3 (Synthetic High Polymers)  
 Section cross-reference(s): 25

ST quinoxaline deriv polymer NMR; benzil prepn nitro displacement; carbon 13 NMR polyquinoxaline; nitrobenzil reaction cresol

IT Nitro group  
 (displacement of, in preparation of bisbenzils)

IT Nuclear magnetic resonance  
 (of carbon-13, in polyphenylquinoxalines)

IT 65012-56-8P 65012-57-9P 65012-58-0P  
 RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
 (preparation and NMR of)

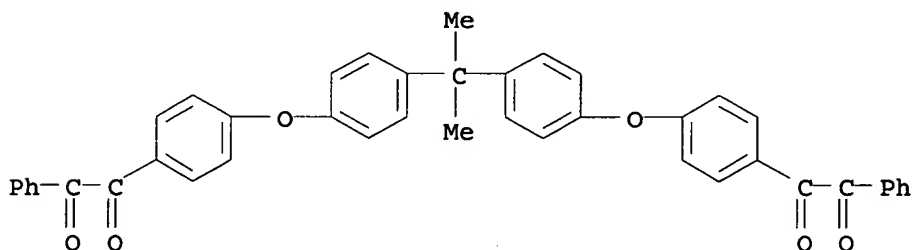
IT 16478-99-2P 54628-95-4P 54628-96-5P 54628-97-6P 54668-05-2P  
 54724-09-3P 54724-10-6P 54724-11-7P 54724-12-8P 59964-09-9P  
 59979-75-8P  
 RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
 (preparation and carbon-13 NMR of)

IT 54628-92-1P 54628-94-3P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
 (preparation and polymerization of)

IT 2676-59-7  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (reaction of, with benzil)



IT 22711-24-6  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (reaction of, with methylphenol)  
 IT 80-05-7, reactions 92-88-6 106-44-5, reactions 123-31-9, reactions  
 1965-09-9  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (reaction of, with nitrobenzil)  
 IT 134-81-6  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (reaction of, with tetraaminodiphenyl ether)  
 IT 54628-92-1P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP  
 (Preparation); RACT (Reactant or reagent)  
 (preparation and polymerization of)  
 RN 54628-92-1 HCAPLUS  
 CN Ethanedione, 1,1'-[(1-methylethylidene)bis(4,1-phenyleneoxy-4,1-  
 phenylene)]bis[2-phenyl- (9CI) (CA INDEX NAME)

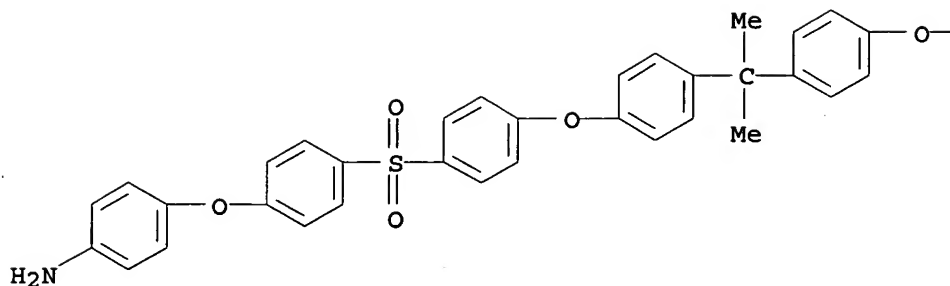


L21 ANSWER 41 OF 41 HCAPLUS COPYRIGHT 2005 ACS on STN  
 AN 1975:593786 HCAPLUS  
 DN 83:193786  
 TI Synthesis and structure-property relations in high temperature polymer  
 systems based on aromatic diamines  
 AU Brode, George L.; Kawakami, James H.; Kwiatkowski, George T.; Bedwin,  
 Albert W.  
 CS Res. Dev. Dep., Union Carbide Corp., Bound Brook, NJ, USA  
 SO Advances in Chemistry Series (1975), 142(Copolym., Polyblends, Compos.,  
 Symp., 1974), 343-53  
 CODEN: ADCSAJ; ISSN: 0065-2393  
 DT Journal  
 LA English  
 AB Aromatic sulfone ether diamines, prepared by a nucleophilic displacement  
 reaction in an aprotic solvent of Na p-aminophenol [15267-98-8] or a  
 bisphenol salt with an aromatic sulfonyl halide, were condensed with aromatic  
 polycarboxylic acid anhydrides or chlorides to give polyamide-imides with  
 good heat stability, solvent resistance, and impact strength, and high  
 glass transition temperature (Tg). 4,4'-[Sulfonyl  
 bis(p-phenyleneoxy)]dianiline  
 (I) [13080-89-2] and polyether diamines based on bisphenol A [80-05-7] and  
 hydroquinone [123-31-9] were prepared and used as monomers. I was  
 treated with isophthaloyl or terephthaloyl chloride, trimellitic acid  
 anhydride or chloride, benzophenone tetracarboxylic acid anhydride, and  
 pyromellitic acid anhydride to give polyimides with Tg 230-320°,  
 tensile modulus 270,000-440,000 psi, elongation at break 8-15%, and  
 pendulum impact strength 70-197 ft lb/in3. 4,4'-Diaminodiphenyl sulfone  
 and the monomers prepared from the bisphenols were reacted with  
 trimellitoyl chloride to give polyamide-imides with Tg 180-350°.

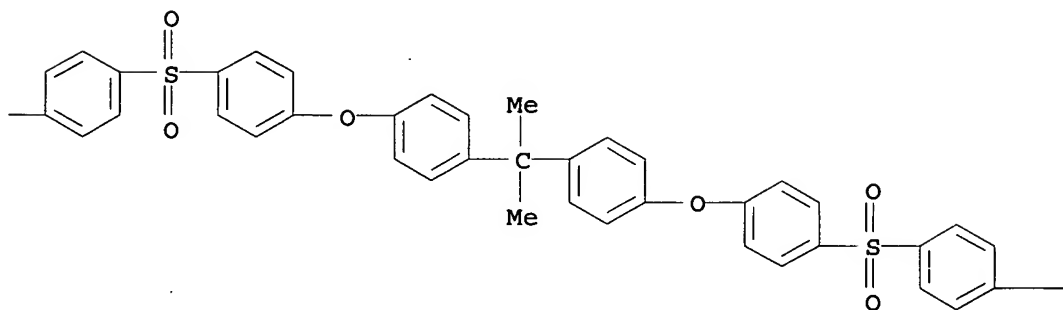
tensile modulus 270,000-425,000 psi, tensile strength 10,000-14,000 psi, and elongation at break 8.5-50%. Polymers with high amide-imide or imide weight contributions in the repeat unit had good resistances to environmental stress aging whereas polyamide-imides containing the diphenylisopropylidene structure had only fair resistance. The polar diphenylsulfone unit and the rigid, polar, amide-imide units were primarily responsible for the high Tg values. The polymers had initial weight loss at 350-400° in air. Polyamide-imides based on I, the bisphenol A-based polyether diamines and the polyimide based on benzophenone tetracarboxylic dianhydride had the best flow properties and were most suitable for molding.

- CC 35-3 (Synthetic High Polymers)
- ST sulfone ether diamine polymer; polyamide imide  
sulfonylphenyleneoxydianiline; polyimide amide  
sulfonylphenyleneoxydianiline; heat resistance polyamide imide
- IT Polyimides  
RL: USES (Uses)  
(amide-, aromatic sulfone ether diamine-based, heat-resistant)
- IT Polyamides, preparation  
RL: PREP (Preparation)  
(imide-, aromatic sulfone ether diamine-based, heat-resistant)
- IT Glass temperature and transition  
(of polyamide-imides prepared from aromatic sulfone ether diamines)
- IT Heat-resistant materials  
(polyamide-imide, aromatic sulfone ether diamine-based)
- IT 25135-51-7 26912-99-2 26913-00-8 27553-90-8 29896-48-8  
31800-86-9 52319-42-3 52319-43-4 52319-44-5 52319-45-6  
52858-23-8 56585-71-8 57216-44-1 57216-46-3  
RL: USES (Uses)  
(heat-resistant)
- IT 13080-89-2P 52858-24-9P 52925-91-4P 54139-50-3P  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(preparation of)
- IT 80-05-7, reactions 123-31-9, reactions 15267-98-8  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(reaction of, with aromatic sulfonyl chlorides)
- IT 52858-24-9P 52925-91-4P  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(preparation of)
- RN 52858-24-9 HCAPLUS
- CN Benzenamine, 4,4'-[sulfonylbis[4,1-phenyleneoxy-4,1-phenylene(1-methylethylidene)-4,1-phenyleneoxy-4,1-phenylenesulfonyl-4,1-phenyleneoxy]]bis- (9CI) (CA INDEX NAME)

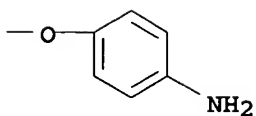
PAGE 1-A



PAGE 1-B



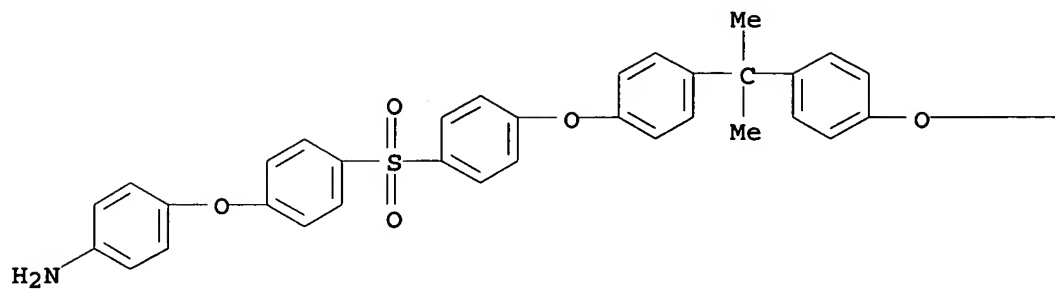
PAGE 1-C



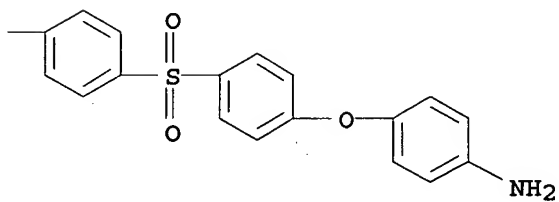
RN 52925-91-4 HCAPLUS

CN Benzenamine, 4,4'-[(1-methylethylidene)bis(4,1-phenyleneoxy-4,1-phenylenesulfonyl-4,1-phenyleneoxy)]bis- (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 1-B



=>